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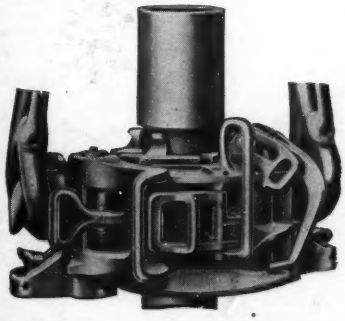

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Vol. 32
No. 24
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IN THIS ISSUE

Review of 1939 Oil Field Activities 3

Indicating By Cathode Ray Oscillograph 8

Pathfinder Completes Modern Refinery 14

Laugh This Off 32

San Joaquin Valley Development 36

Los Angeles Basin Development 42

Coastal District Development 45

Crude Oil Production 52

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December 26, 1939

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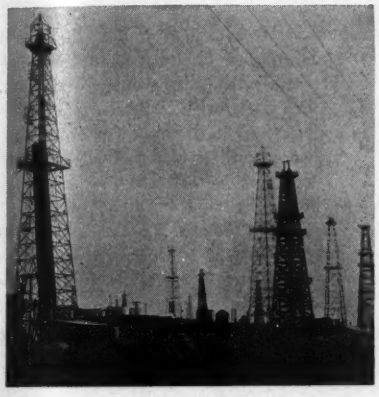
Thumbing The Oil Pages of 1939 Reveals

Many Short-Lived "Hot Spots"

Now that the oil development story in California's book of 1939 is nearly told, it seems proper that we should thumb thru it's pages again and scan for a moment the high points of the news, good and bad, before committing the tale to history.

The opening chapter of the story will find Torrance holding the spotlight as the hottest townsite drilling program in years. As we follow this story we will find records established for fast, snow-drift drilling and for speedy completions. Near the middle of the story we will find the mushroom field collapsing due to overproducing sands too weak for long lived production.

West Montebello is producing the Seventh Zone, multi-zone production will



Steel derrick on left is Mabee Oil and Gas Co.'s Monterey No. 36 at West Montebello. Note mid-continent style of racking pipe in front of draw works. (Quite natural since the operators and crew are from Oklahoma fields.) Short wooden derricks at right are Kern Oil Co.'s old shallow wells.

finally enter the picture, the prolific Eighth Zone will be uncovered and near the finish of the year speculation will turn to the possibilities of a ninth and deeper horizon.

The Coalinga Eocene will come into prominence and its sister shore-line deposit, the Coalinga Northwest field will be discovered. Greeley, Canal, Ten Sections, Rio Bravo Cole's Levee and the Richfield Western Areas will command the spotlight as successive discoveries and additions add to the great wealth that is California's.

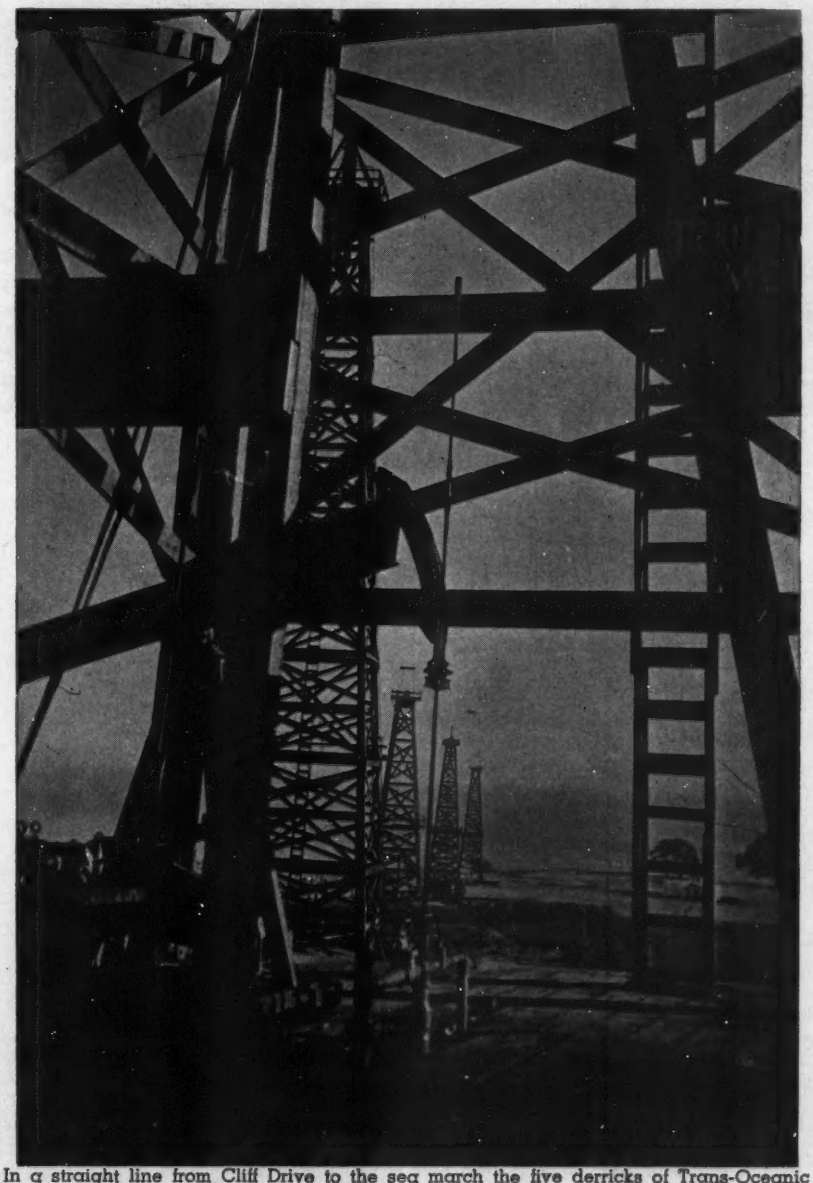
Wilmington and the Long Beach area will continue its great development, figures will come to light showing this field to be the greatest in the State, both from production and reserves standpoint, some wells showing 5000-7000 barrel potentials.

Countless development tests, deep and shallow, will blanket the structures of the state and with successes counterbalancing the failures, hope, courage and cash will pour itself into plans to continue through the coming 1940.

JANUARY

Amerada Petroleum spudded S.P.L. No. 7-17, four miles north of the Eocene Pool and 2 miles east of Coalinga production. This was the start of the great Coalinga Northeast play. Superior Oil Co. completed Cagle No. 1 flowing 3200 bbl. rate to extend the Eocene Pool ¾ mile to the north.

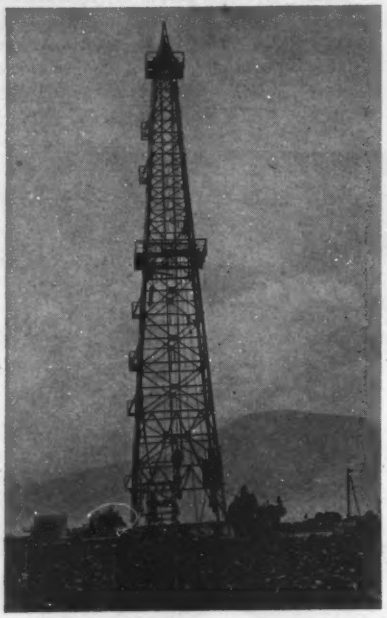
California Exploration Co. was drilling Salisbury No. 1, a 12,989 ft. hole destined to prove this area, near Buttonwillow, to possess unproductive Stevens oil sand. Richfield Oil Corp, completed its Wheeler Ridge outpost, KCL No. 1,



In a straight line from Cliff Drive to the sea march the five derricks of Trans-Oceanic Oil Co. on Santa Barbara Mesa. Because of a fault, roughly paralleling this line and separating it from the main field to the west, these wells encounter the Vaqueros oil sand at 1500 ft. Declaring this to be the world's most beautifully located oil field, Superintendent Wallace is building his home between the trees in the background at the edge of a 75 ft. bluff overlooking the ocean.

flowing from the middle Miocene. Water came in fast however and the middle of the year found the well deepening to the Oligocene, a normally productive horizon on the coast, which proved to be non-productive in the South Valley.

Ventura County saw steady production efforts, with Ridge Oil Co. abandoning its attempt to extend the Rincon Field at 8021 ft.



This farmer's land produced a more profitable crop than that shown in the foreground when Universal Consolidated completed Derby No. 2, in the Arvin area for 2800 barrels of 30 gravity oil.

Torrance expanded at feverish pitch, new wells were reported by the score and wells were completed daily. Felix Mallon and Santa Fe Springs Synd. each completed for 1000 barrel flows.

Montebello's lush production from the Masser and 7-1 zones was calling in new operators, and peak activity was on its way.

FEBRUARY

Standard Oil and The Texas Co.'s discovered the long sought extension to the Mountain View Field, with the completion of Jewett No. 1 for 3600 barrels daily rate. This occasioned a frenzied flurry of drilling which proved the area to be limited in size and activity dwindled almost to the vanishing point before the year was out.

At Cole's Levee, Ohio Oil Co.'s F-2, encountered the producing zone 70 ft. higher than in its discovery well, F-1, which was completed flowing 1000 bbls. of 50 gravity oil late in 1938.

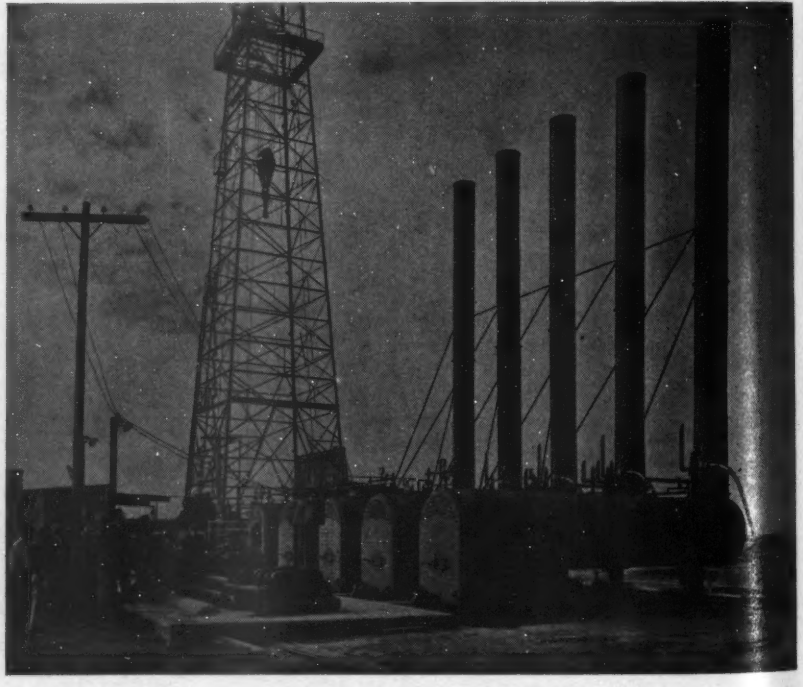
At Long Beach, the Harbor Commission was calling for bids to develop four parcels of tidelands, the ultimate development of which is expected to yield millions of dollars to the municipality. At the turn of the year there were many wells pouring out wealth to the city under the operation of the Long Beach Development Co., a combination of companies and operators joined to do the work under contract.

Sullivan No. 1, pictured when General Petroleum was digging deep to extend Vedder zone production to a point more than a mile northwest of the Greeley Field.

Superior Oil Co. was preparing to drill Moodie No. 1, an outpost north of the Rio Bravo Field which realigned the conceived idea of this rich field, when it was completed flowing more than 3000 barrels daily near the middle of the year.

In the "hotspots", Montebello and Torrance, activity was booming. Completions were coming fast and furious while each successive day saw new operators entering the rush for black gold.

Coalinga Eocene Pool's largest operator, Robert S. Lytle, agent for Petroleum Securities holdings, completed 71-



Five 500-lb. working pressure boilers with integral superheaters operating super-engines and pumps, were used by Superior Oil Co. to drill Rio Bravo wells in record time.

18F flowing 3615 barrels. Standard brought in 1-17 for 2335 barrels, and the drills sang merrily onward with 10 strings under way.

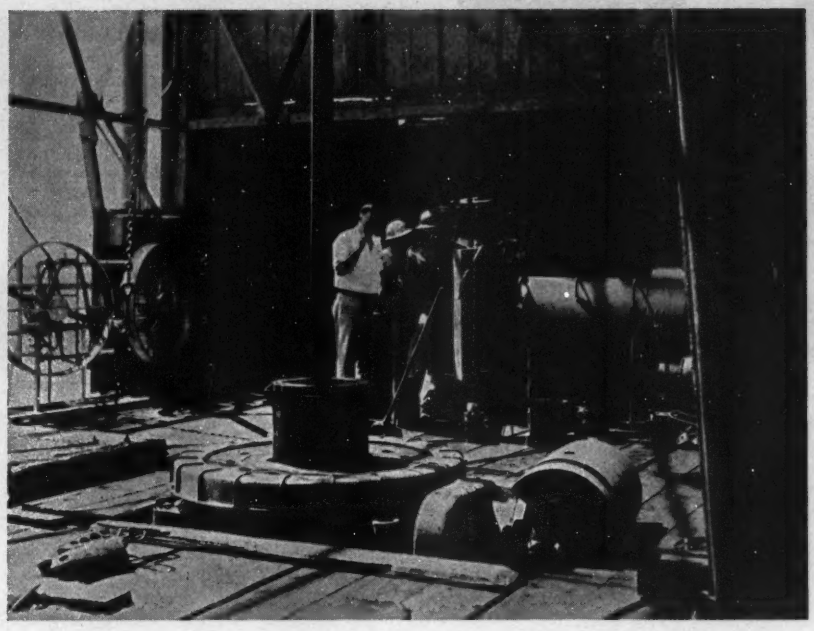
MARCH

Shell Oil Co. started work on Port Costa No. 1, a wildcat in the Cantua Creek area of Fresno County, and which drilled to barren Cretaceous at 10,711 ft. The year saw many holes dug in this area to deep zones, none of which afforded a shot at production.

General Petroleum prepared to drill BVA No. 1 in the Buena Vista Lake district, a test which was still working below 10,600 ft. in the last weeks of the year. Shell Oil and Richfield Oil also entered the area during the next few months and were digging in the deep zones when the calendar pages neared 1940.

Two deep wildcats in the Lerdo district of Kern Co. were washed out in the barren Vedder zone. Texas Co.'s KCL No. 35-1 stopped at 8821 ft. and Shell Oil Co. halted the drill in KCL No. 2A-23-2 at 9600 ft.

Continental Oil Co. was grading for KCL No. D-2 in the Strand Area. This was abandoned late in the year at 14,051 ft. as the third deepest drilled hole in the world, when drill pipe was stuck during tests of meager showings in the Olcese at 11,600 ft. The company spudded E-35-7 which was one of the important discoveries of the year.



Superior Oil Co. keeps its crew cool while drilling in the terrific summer heat. Note the large twin fans, to which Don Cook production supt. (in white shirt) is keeping his back. Rotary table and drawworks give an idea of the rig used to drill Burner No. 1.

Richfield Oil Corp. erected rig for a deep test on the flat lands north of Signal Hill, a test which exhausted all possibilities prior to abandonment at 7492 ft.

Continental Oil Co. completed KCL No. A-4 at Wasco, site of the world's deepest production, flowing a potential of 9200 barrels daily from 13,153 ft. Standard Oil Co.'s Mushrush No. 2 was drilling in siltstone at 13,125 ft. after encountering oil sand at 13,080 ft.

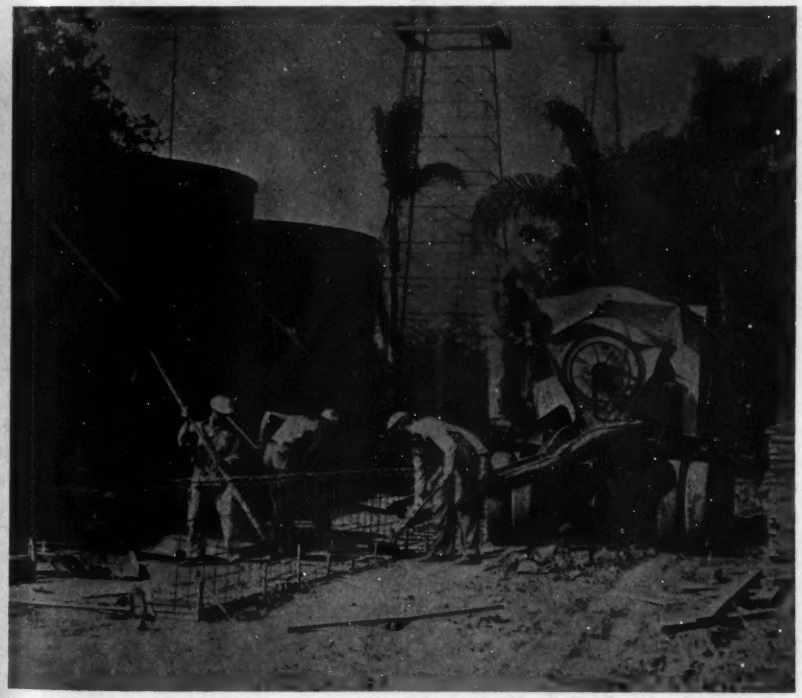
APRIL

Alliance Petroleum Corp. brought new vigor to activity on the north flank of the Ventura Avenue field with the completion of Hisey No. 3 flowing 2080 barrels from 8520 ft.

Amerada Pet. completed SPL No. 7-17 at Coalinga wildcat test area, flowing 4230 barrels 28 gravity oil with more than 14,000,000 cubic feet of gas. This confirmed the company's faith and caused Bandini Petroleum to begin grading for its No. 48-18 in sec. 18, 19-16.

At Torrance, the southerly march of development was stopped when King Petroleum abandoned No. 1 at 5198 ft. and Riviera Petroleum suspended operations at 5369 ft. In the proved area the majority of completions were showing a high water cut, and established flowing wells were being put on the beam.

Western Gulf Oil Co. along with The Texas Co. began operations on the Buena Vista Lake area wildcat which in September produced the Stevens Zone from 10,175 ft. The strike was subsequently named the Paloma field.



Building a firewall about production tanks in West Montebello. From the palms and foliage visible in the background it is apparent that this field was developed in the heart of Southern California Nursery Farms. Montebello operators pay heavily for growing nursery stock removed to make way for the drill.

The American dye industry no doubt would rank The Dow Chemical Company's development of synthetic indigo as Dow's most outstanding achievement. For it was Dow's extensive research that produced, in 1916, the first synthetic indigo on a commercial basis, thereby freeing this country from foreign monopoly and marking the beginning of the great American dye industry.

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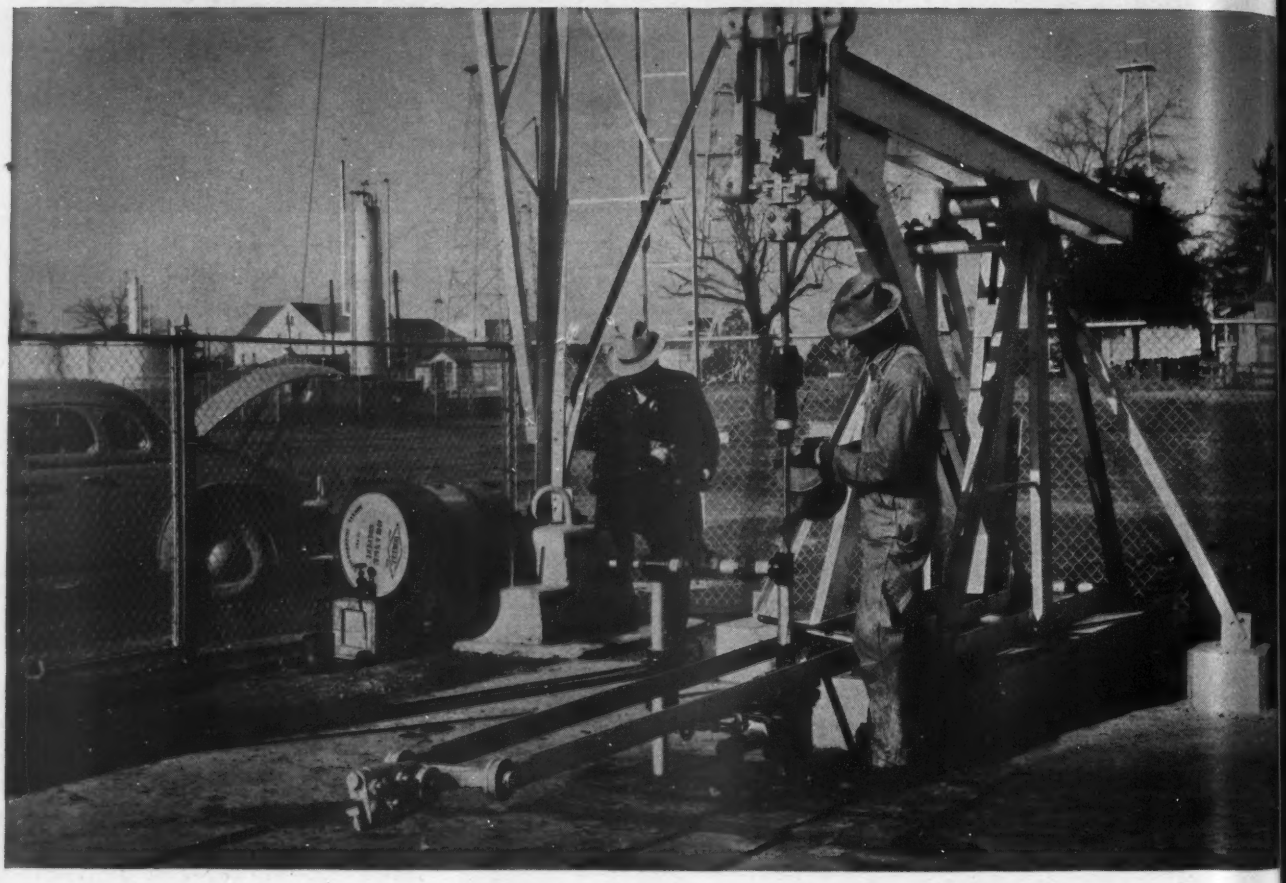

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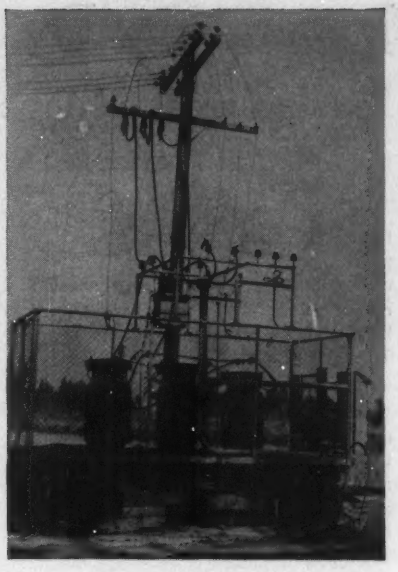
It doesn't take long to make a slush pit in the latest Montebello play.



Not all Southern California drilling is done with steam rig. Pictured here is the transformer trailer that General Petroleum sends around to its electric powered jobs.

Tide Water Associated Oil Co. completed Porter No. 2 in the Aliso Canyon field of Los Angeles County. The well, located in a land where the dips approach the vertical, made more than 600 barrels of 25 gravity oil. This success started unsuccessful ventures in the area by Union Oil Co. and Standard Oil Co. each of whom found no production.

At Rio Bravo, Bill Keck of Superior Oil Co. rigged up Moodie No. 1 with the world's heaviest drilling equipment and made 7125 ft. of hole in 12 days.

MAY

E. A. Parkford started his southeasterly outpost at the Coalinga Eocene Pool. Drilled near the center of sec. 24,20-15, in October the well bottomed in gray sand at 8243 ft.

Universal Consolidated Oil Co. completed a southeasterly Arvin area outpost. Located in sec. 15,31-29, the well, known as Universal-Derby No. 1, flowed 3800 barrels clean 29 gravity oil.

At Seal Beach, Union Oil Co. abandoned Neito No. 1 at 7101 ft. Situated east of the city, the well found no showings worthy of a test.

R. R. Bush Oil Co. extended known productive limits of the West Montebello Field when Olds No. 1 came in flowing 720 bbls. clean 35 gravity oil from the upper 7th zone. Situated at the west flank of the field, this completion focused the interest of the operators on the westerly area. In the east end of the field, Graham and Loftus Oil Co. completed Coffman No. 1 for almost exactly the same flow from the lower fingers of the 7th zone.

At Wasco Standard Oil Co.'s KCL No. 8-B2 flowed on potential test at a 6110 bbl. rate, 37 gravity oil, through a 37/64 in. bean. The flow came from the A-2 zone, with bottom at 13,175 ft.

JUNE

Despite the fact that legal steps were being taken to enforce a 250 bbl. maximum at West Montebello, eight new wells were located in the last week of the month. Five completions were effected in the same period, flowing more than 1000 barrels each from the lower 7th zone. Indications were that peak acitvity could not be far away.

At Signal Hill, Rocky Jerman started his Dormax Oil Co.'s deep test at 25th and Gaviota. The well caused great excitement which came to a head in November and December.

Lloyd Corporation well No. 2, in the northeasterly section of the Ventura Avenue field, started flowing while circulating oil to loosen drill pipe stuck on bottom at 9976 ft. Initial production was 2253 barrels with nearly 2,000,000 cubic feet of gas.

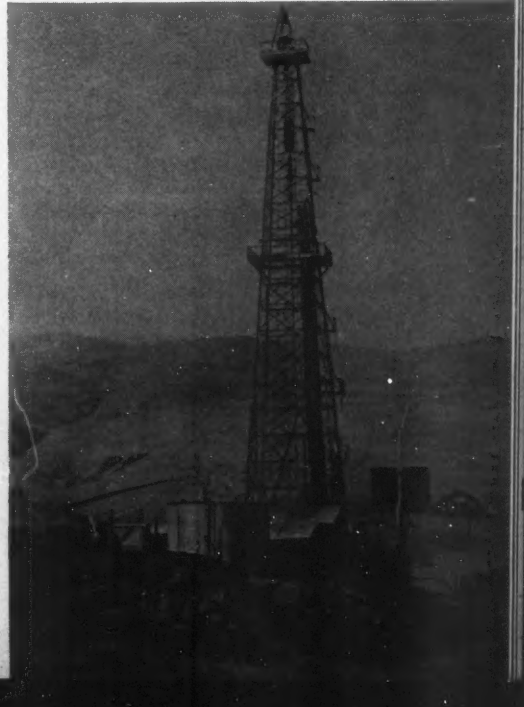
Montebello witnessed two great spectacles in one week when wells blew out and ran wild from the terrific gas pressures. V-8 Oil Co. and Gus Pongratz were the operators whose wells blew gas condensate and oil spray over a wide area before being brought under control.

In the wildcat area southeast of Wasco Union Oil Co. abandoned its 12,985 ft. deep well, after recovering only the slightest quantities of oil in a test of the Vedder below 12,793 ft.

JULY

Fullerton Oil Co.'s Trustee No. 1, established the easterly limits of West Montebello field limits when it became known that the lower 7th, or 8th zone as it is now known, was wet. The well was plugged back to upper zones for a

(Continued on Page 27)



Suspended Wheeler Ridge test, which Richfield Oil Corp. attempted to complete in the Oligocene and establish a new south Valley producing horizon. Tests up-hole from bottom at 11,168 ft. yielded clear salt water.

Indicating By Cathode Ray Oscillograph

In High Speed Machines

C. N. G. A. December, 1939, Meeting

By JOHN ROGERS, Ingersoll-Rand Co.

The problem of determining the relationship between cylinder pressure and piston position in high speed reciprocating machinery, such as engines and compressors of the modern design, has become a difficult one.

The old steam engine indicator with various improvements and modifications was long considered the only way to accomplish the task of producing this relationship. As modern designs demanded increased rotative speeds, errors and inaccuracies crept in, and in many cases were magnified.

Results obtained from these mechanical indicators at the higher speed could not be depended upon to furnish a check and data for improvement. This was due to hook-up link motions, strings, wires, inertia, momentum, friction and many other things connected with this instrument.

It was the desire to get away from all these mechanical linkages which led to an investigation of all known types of electrical apparatus that might be applied. The telephone laboratories were consulted, and it was primarily through them that the investigation led to the radio field.

It is fortunate today that recent advances in the field of electronics had made available in commercial form, electrical apparatus for measurements, able to carry on beyond the limitations of mechanical apparatus, and in speeds such as are not yet thought of in reciprocating equipment.

After listening to the paper by Mr. Moore at the Annual Fall Meeting of the California Natural Gasoline Association this year, and the ensuing discussions, we can more than ever appreciate the problems of speed that we face. Ten thousand R.P.M. will be "chicken feed," in certain vernacular.

To match the high speeds with indicating apparatus, the Cathode Ray Oscillograph Tube seems to be the answer. It is an ideal means of picturing pressure diagrams.

There also has to be pressure elements that will generate the voltage to deflect the ray and a synchronizer to transfer the rotative deflection on the tube screen, and amplifiers to build up the deflecting voltages. You can well appreciate the time and money which has been expended in these developments.

John Rogers

The Tube

The cathode ray oscillograph tubes are either highly evacuated or contain a gas of low pressure. In the latter the means of light focus are simple: but the vacuum tube offers greater possibilities of amplification without undue distortion and is probably the most universally used.

The tube has only recently come to the stage where it is a useful laboratory instrument. Its application to radio and television work has been largely responsible for its rapid development.

The "moving element" in this tube is a "beam" of electrons which has neither inertia or momentum, and, therefore, is well suited for use where high frequency—and wide frequency ranges are involved.

The principle of operation is that a beam of electrons when impinging on a suitable surface cause a visible flourescence.

The electrons are negatively charged particles and are produced by a heated body. In the cathode ray tube there is an electrically heated cathode. This emits electrons in all directions when indirectly heated by a filament incorporated in the cathode itself.

Figure 1

The cathode ray tube permits only a portion of the total electrons emitted to pass on to the accelerating electrode H. Focusing electrode F concentrates the cathode ray or beam. This is the low voltage anode.

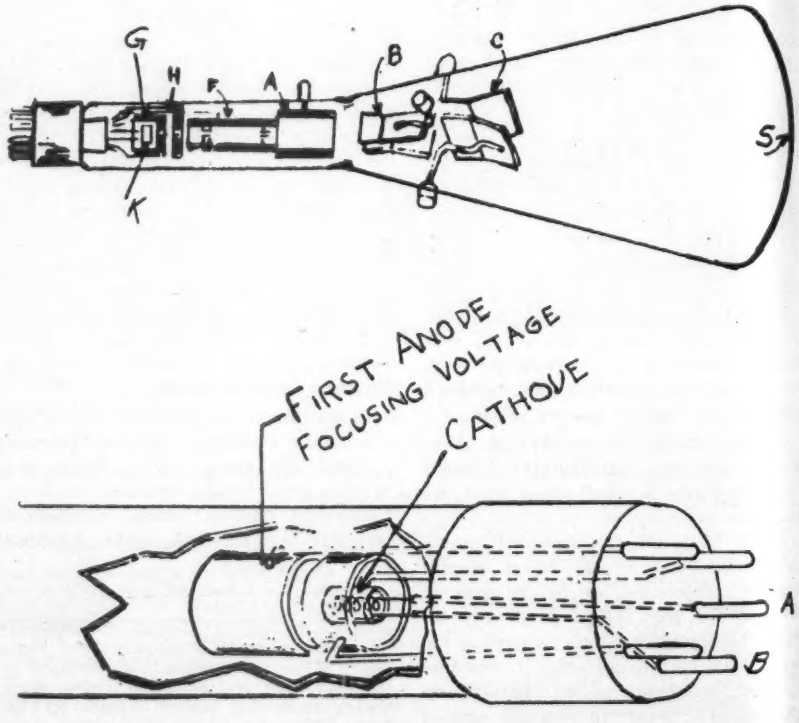


Figure 1

The high voltage anode A further accelerates the beam before passing through the vertical and horizontal deflecting plates, B and C.

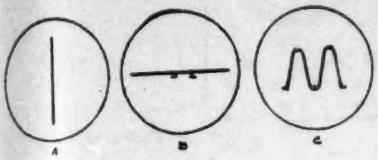


Figure 2

The inner surface of the viewing screen is coated with zinc silicate on which there appears a fluorescent glow at the impact point of the electron beam.

This series of electrodes are collectively called the electron gun or nozzle.

Since these electrons are charged particles, they can be deflected by electrical fields. The plates B and C are used for this purpose.

When you view the end of the tube or screen you see the field for the indicator card, and are looking into the end of the beam. By passing amplified voltage across the path of the beam, using plate B, the beam can be made to cross the screen in a horizontal line of light.

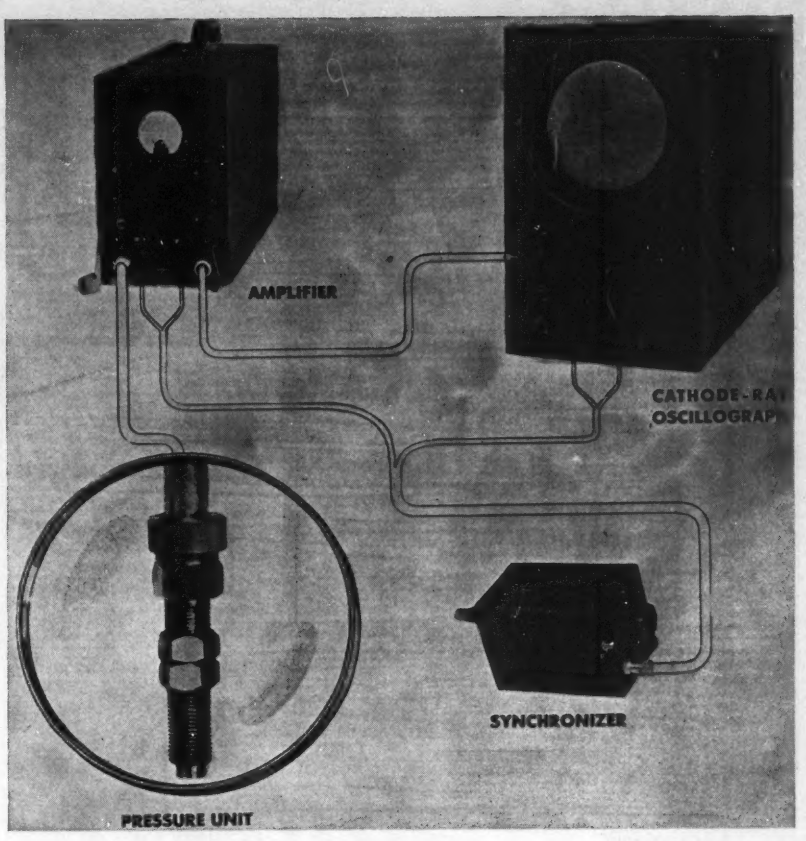
Figure 2

When passing a voltage across plate C, a vertical line will appear on the screen. By passing synchronized voltages across both plates a wave can be produced.

In order to plot a curve on regular graph paper, two linear units of measurement must be known—one vertical and the other horizontal.

In order to trace a curve on the screen the same vertical and horizontal conditions must be satisfied.

The vertical plates B control the pressure and are connected as mentioned above, to amplified voltage produced through a pressure element connected to cylinder of engine, compressor or pump, as the case may be.



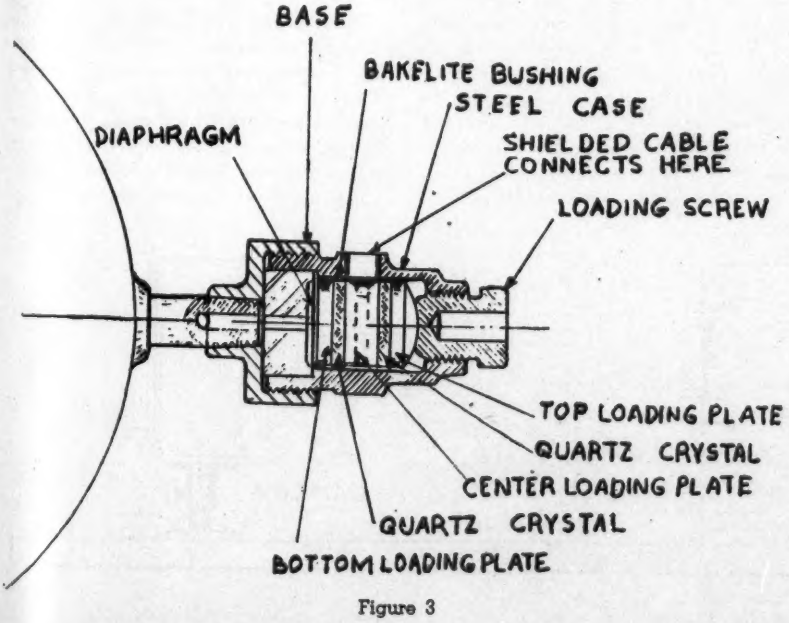


Figure 3

Figure 3

The pressure conversion unit is a device for the conversion of rapidly changing pressures into electrical impulses.

The unit consists of two quartz crystals securely mounted in a steel case so designed that it can be attached to the cylinder head or the indicator hole of the cylinder to be indicated. An early type is shown in Figure 3.

The diaphragm at the end next to the cylinder receives the impulse or pressure, and transmits it through a loading plate to the quartz crystals which have between them an electrode which is insulated from the case. There is also a loading screw for adjustment.

Most of you know how difficult it is to maintain a violently vibrating pressure gauge. You can appreciate how difficult it has been to develop a pressure element that is sensitive, and will at the same time withstand the shock and temperatures that are a part of the indicating difficulties.

The "Piezo-Gauge" has proven the most satisfactory. There are other types in various stages of development which may be better, but they are not generally marketed.

We will confine our discussion to the Piezo Gauge.

The crystal pressure unit, as mention-

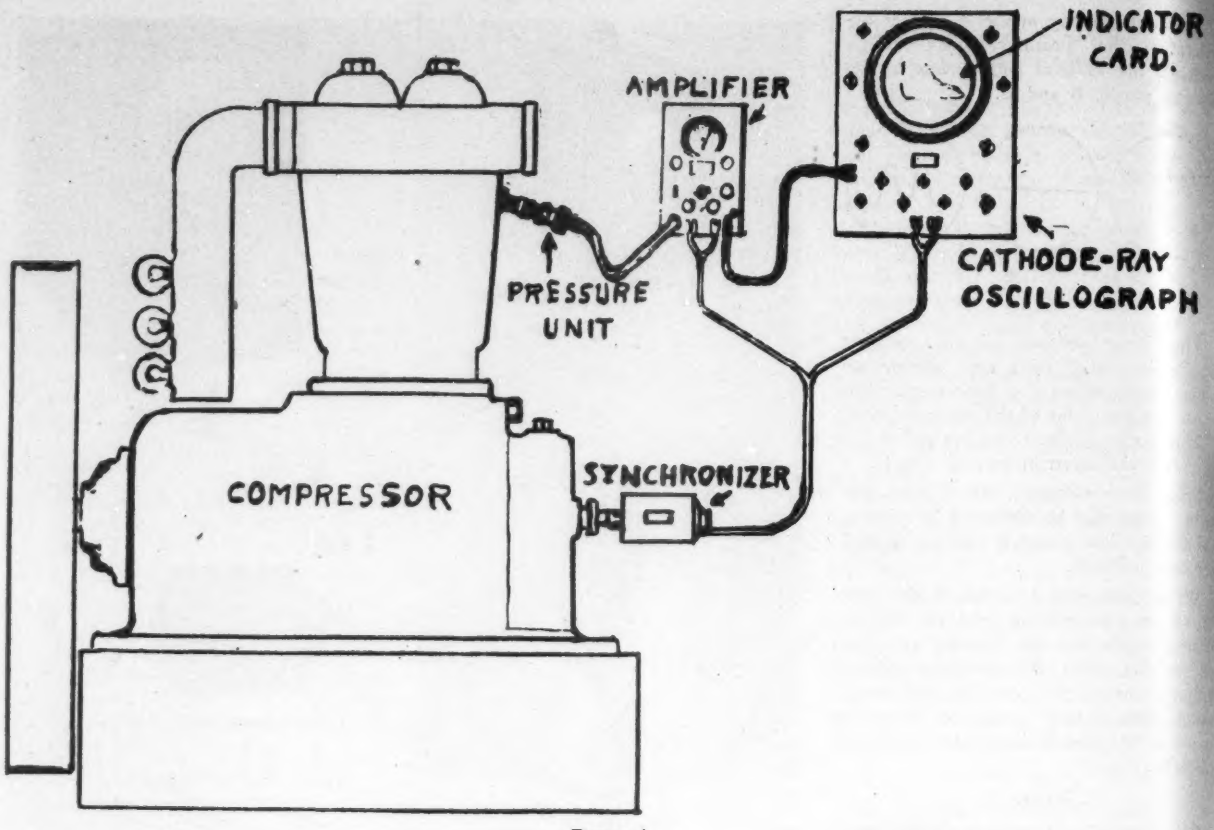


Figure 4

ed before, converts pressure into electrical impulses. This comes from the properties of quartz crystals, when so ground into discs and matched that when pressure is applied they emit a charge of electricity directly proportional to the pressure applied. This charge is led off through a shielded cable to the amplifying unit, there through amplifying tubes it is stepped up to as much as 100,000 times, and it is this voltage that deflects the cathode ray beam driving it upward on the screen, and this provides the varying pressure line of the card.

These gauges can be made to pressures up to 10,000 lbs. or more. 0 to 100, 0 to 500, and so on, to almost any conceivable working pressure.

The initial load is sufficient to prevent relative movement between crystals and loading plates, when the gauge or unit is subjected to vibration.

Other gauges are used in which magnetic flux and a coil of wire using the coil of wire in which the changes of flux due to motion of diaphragm generates voltage. Others use bent tube to impart motion similar to those in pressure gauges to generate flux. The drawback in these types is generally the oscillation setup. These can be used on the low speed jobs only.

The crystal has one weakness that when the charge is generated by the pressure, it will leak, thus it must be used up rapidly and the crystals are not too dependable below 350 rpm. The charges are not static.

The crystal will stand temperatures above any other type, but temperatures above 600 to 650 deg. F. in the body of the unit should be avoided.

It is necessary to calibrate the units in terms of output. Millivolts per 100 lbs. pressure per square inch. It becomes a relatively simple matter to measure pressures from inside the cylinder by measuring the electrical output and multiplying by the pressure factor.

The electrical output is measured by

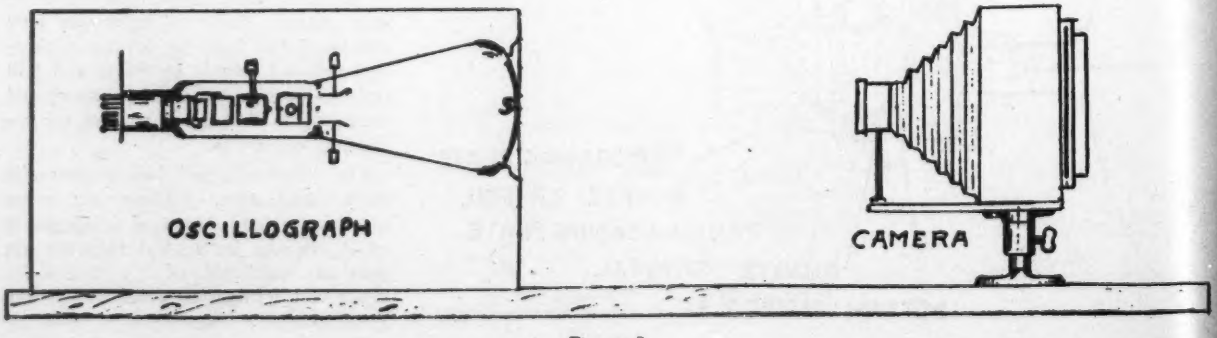
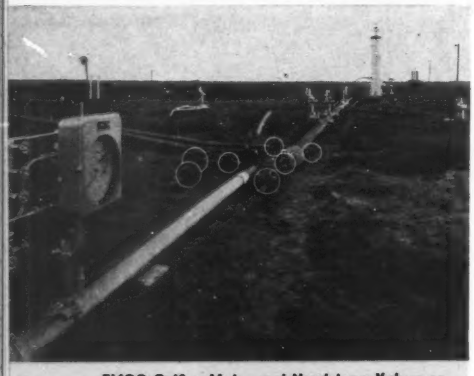
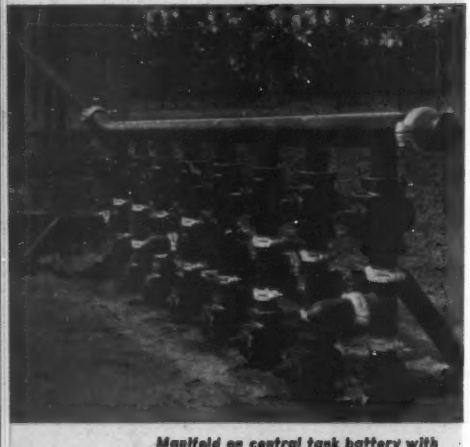


Figure 5

AN OUNCE OF PROTECTION
IS WORTH A POUND OF CURE
NO MATCHES ALLOWED
DEPOSIT MATCHES HERE
...your plant is worthy of
NORDSTROM VALVE protection



EMCO Orifice Meter and Nordstrom Valves on gas line.



Manifold on central tank battery with 4" Nordstrom Valves.

The perfect combination for your gas lines

1. EMCO Meters... 2. EMCO Regulators... 3. Nordstrom Valves

CHOOSE ALL 3 FOR *SAFETY AND PRECISION*

Under the responsibility of our organization are manufactured the most essential measurement and control products for your gas and oil lines – Meters, Regulators and Valves. Each is an engineered product, each is time and service-tested. Carrying the EMCO or NORDSTROM name, each is sold with a warranty of satisfactory service–backed by the entire engineering resources and the extensive follow-through services of our experienced field staff.

We shall be glad to send Bulletins of the Products enumerated below.

Nordstrom Valves on metering and regulating lines of natural gas transmission system.

MERCO NORDSTROM VALVE CO.

A Subsidiary of PITTSBURGH EQUITABLE METER CO.

WORLD'S LARGEST MANUFACTURERS OF LUBRICATED PLUG VALVES; GASOLINE, OIL & GREASE METERS

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NORDSTROM VALVES

WITH PATENTED "SEALDPORT" LUBRICATION

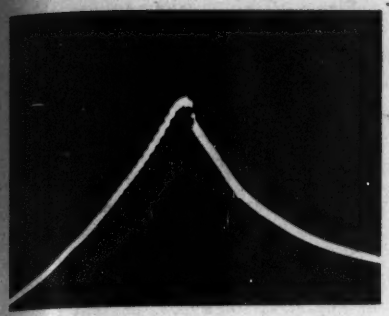


Figure 6

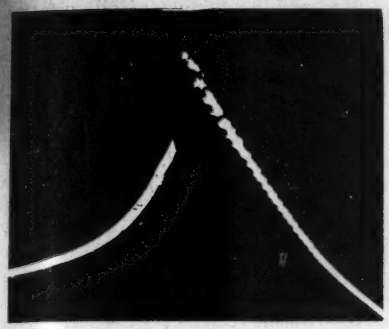


Figure 7

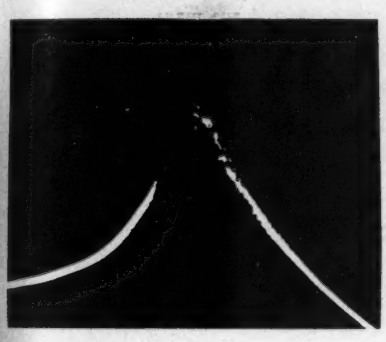


Figure 8

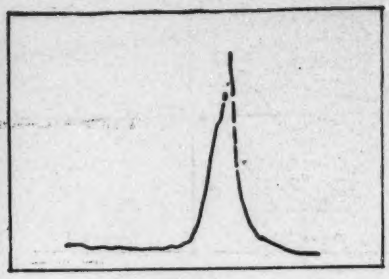


Fig 1

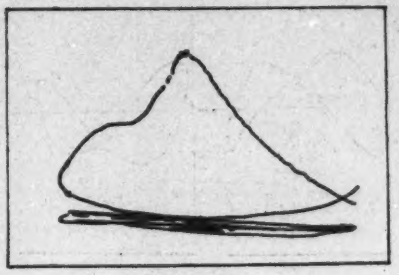


Fig 2

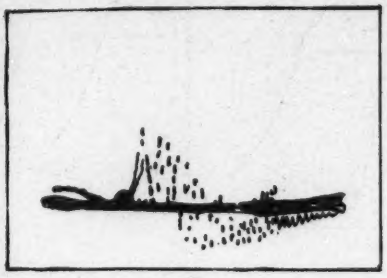


Fig 3

Fig 4

Plate I

the introduction of calibrating voltage whose amplitude is adjusted to produce on the oscillograph a curve of the same height as that of the quartz crystal unit. Since the voltages are then known to be equal, measurement of the calibrating voltage becomes at the same time an accurate measurement of the crystals output voltage.

The Amplifier

Since the voltages generated by the gauge or Piezo crystal units are only a few millivolts, they are not strong enough to deflect the cathode ray. It is, therefore, necessary to build this voltage up by some external means.

This build up or amplification must be produced without distortion in order to increase these minute voltages in exact proportions.

The commercial amplifier as furnished by R.C.A. can amplify up to 45,000 times, which in normal indicating, such as we encounter, is more than is required for pressure diagrams.

There is also in the amplifier a means for measuring the input voltages generated by the crystals, or other types of gauges.

It is necessary to protect these tiny charges from outside interference. Special shielding on terminals is provided.

Synchronizing

In order to sychronize the time axis of a cathode ray oscillograph trace with the rotating shaft, a synchronizer has been developed which is attached to the rotating shaft.

The unit most generally used contains two alternators, one is a six pole unit and one a two pole unit.

The six pole unit generates six cycles per revolution of the rotating shaft, and is used for synchronizing the timing circuit of the oscillograph. The time axis may be locked in step with the rotation at any frequency, which is an integral multiple of 1/6 the frequency of rotation: for example, the timing may be synchronized at one cycle or one sweep across the screen for each revolution, or for 5/6 revolutions, or for two revolutions, etc., etc. The field assembly of this alternator may be rotated through an arc of 60 deg. permitting the selection of any desired phase angle between the shaft position and the start of the timing cycle.

The second alternator has two poles, and generates two short impulses for each revolution of the shaft. The output of this alternator if added to that under observation on the oscillograph will produce a sharp mark on the trace. The field of this alternator is rotated through an arc of 180 deg. and is provided with calibrated dial for determining the angular position of the shaft for any point on the trace.

In cases where there is no rotating shaft such as pumps, hammer drills, etc., it is necessary to provide special voltage producing apparatus. This is usually operated on the principle of furnishing externally applied voltage circuit which in turn is controlled by varying resistance similar in some cases to the old crystal set rheostat with its sliding contact on a coil of wire wound on a rod. This scheme being subject to rapid wear and minute interruptions, has led to other ingenuous schemes such as varying a gap between armature and field by means of tapered rod, passing this through the lines of force and causing variation in voltage. The Kobe Pump Co. of Los Angeles (Kobe, Inc.) have done a great deal of research work in this connection in order to obtain results on slow speed reciprocating indicating in their deep well pumps.

Other than the above described instruments there is one voltage regulator where there is a tendency for varying voltage on the power circuit due to sudden draft of current.

The typical hookup to a high speed gas engine is shown in drawing of indicator assembly. See Figure 4.

Figure 4

In a compressor the assembly would be the same but the pressure element is located in the conventional indicator holes, drilled into each end of the cylinder body.

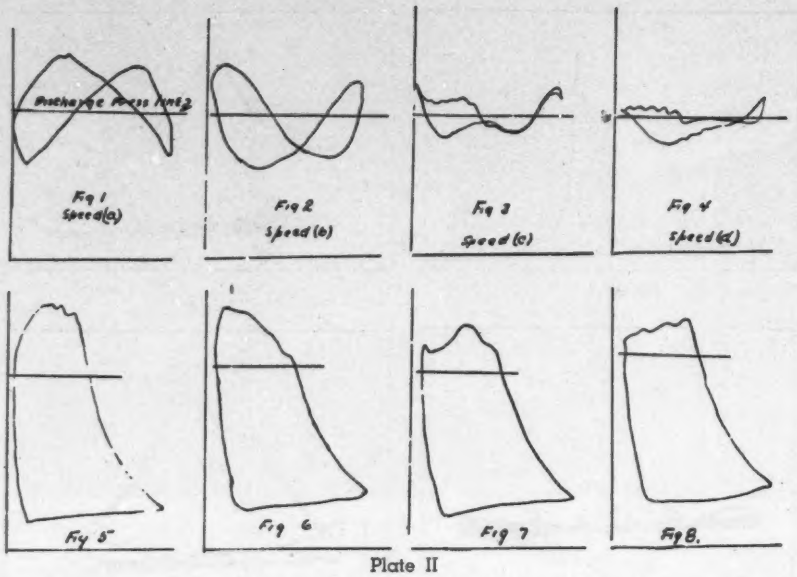


Plate II

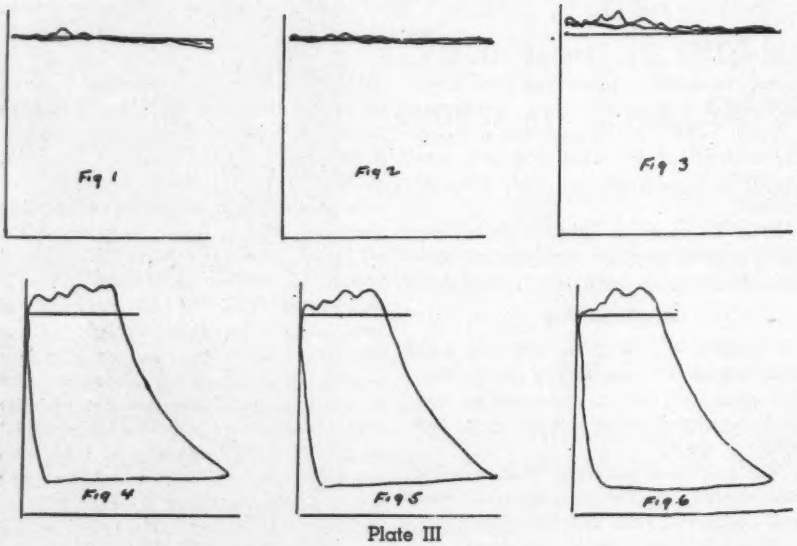


Plate III

In order to get a permanent record of the traces on the screen it is necessary to firmly mount a camera a short distance in front of the screen. The camera should be a high grade commercial instrument with a lense F 3.5 or faster, and panchromatic film.

Exposure will vary with image intensity and experiment will best determine this.

Figure 5

Figure 5 will illustrate the relative position of the camera and the oscillograph screen.

Figures 6, 7 and 8
Interpretation of the Diagrams

Figures 6, 7 and 8 are pressure time oscillograms obtained when using 80, 70 and 60 octane fuels respectively under exactly the same conditions.

In these three figures ignition occurs at the inked lines on the left, and normal combustion follows until detonation takes place; the beam is deflected instantaneously vertically, in proportion to the pressure increase inside the cylinders due to spontaneous ignition. Peak pressure is followed by the hashing of the trace and is attributed to vibration of cylinder heads, pistons and valves.

Plate I

Plate I—Figs. 1, 2, 3, 4 are tracings from cards taken from diesel engines.

Fig. 1 is a pressure diagram. The horizontal axis represents 720 degrees of crank shaft rotation, of four complete strokes.

Fig. 2 represents 120 degrees of crank shaft rotation, resulting in a broader scale, which permits more detail.

Fig. 3 shows rate-of-pressure change diagram. This is obtained by inserting a condenser in series between the amplifier and the oscillograph. This is 120 degree time axis. It shows the disturbance produced during the combustion process.

Fig. 4 shows two 120 degree pressure time diagrams and the variations between two successive combustions.

You can well appreciate how difficult it would be to secure these variations in any piece of apparatus that has inertia or momentum.

Mechanical vibration of all sorts can be studied through the use of this equipment.

Pressure waves in compressor piping, which in so many cases cause loss of power and reduced efficiency, can be studied and compared.

Plate II

Plate II—tracings of card studies in various speed operations of high speed compressors, which result in corrections as shown on Plate III.

The applications of the oscillograph for study of problems in which we all are interested are many. The outstanding feature of the oscillograph is its practically instantaneous response. This feature will be used on our future gauge boards and control apparatus in our plant operation.

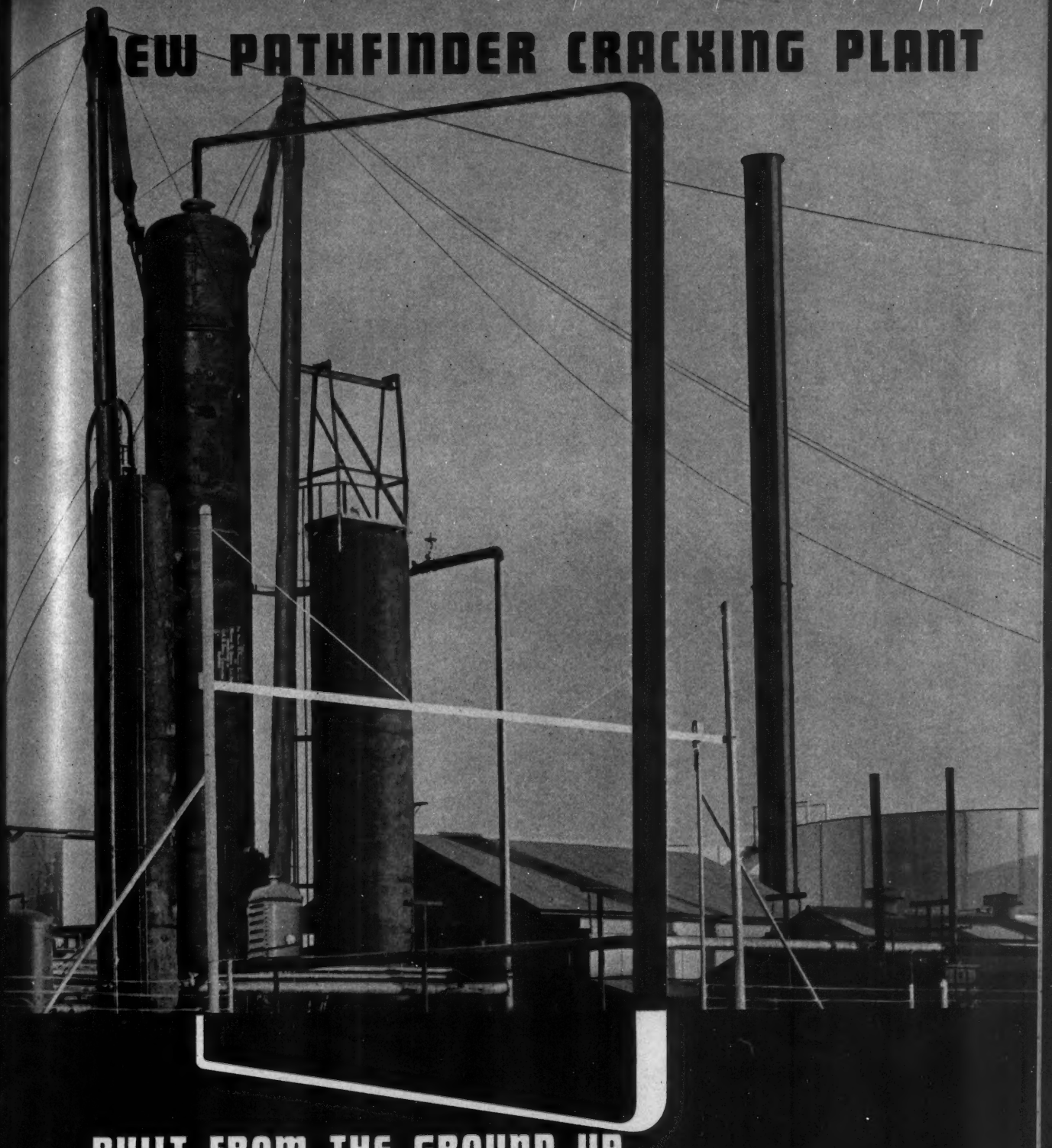
Mr. Moore, with his ability to prognosticate, should be brought in to anticipate the uses of the cathode ray oscillograph.

Note: Credit is given to the Tide Water Associated Oil Company, Research Dept., for their aid in furnishing slides and data. The R. C. A. for cuts and data on the instruments.

A. P. I. Topical Committee Officers in California

Technical sessions and standardization meetings at the A. P. I. annual meeting in November were the subjects for report and discussion at the meeting of Topical Committees on Drilling and Production Practice on December 12. T. A. Atkinson, General Petroleum Corp., was named as chairman of the California Topical Committee on Drilling Practice for 1940, and R. W. French, Continental Oil Co., was named chairman of the California Topical Committee on Production Practice. The committees hold monthly meetings in Los Angeles throughout the year. National chairman of the Topical Committee on Drilling Practice, A. P. I., for the coming year will be B. H. Robinson, General Petroleum Corp., Los Angeles.

EW PATHFINDER CRACKING PLANT



BUILT FROM THE GROUND UP...

PACIFIC CRANE & RIGGING, Inc., handled a large part of the construction on the new cracking plant for Pathfinder Petroleum Co. at Long Beach, Calif. We drove the piling, poured the concrete foundations, built the brick buildings, transported and erected all tanks, towers and heavy equipment. Our contracts were completed ahead of schedule. Pacific Crane & Rigging, Inc., is equipped to handle any type of oilfield or refinery construction . . . anywhere in the west.

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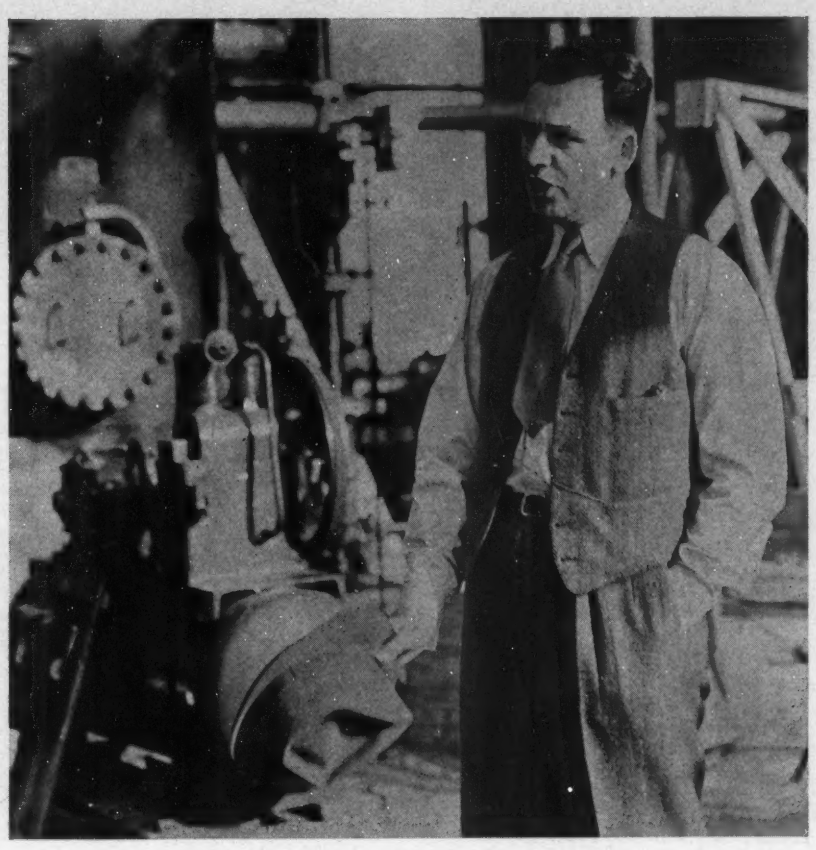
High Octane Gasolines, Premium Fuel Oils

From New Refinery

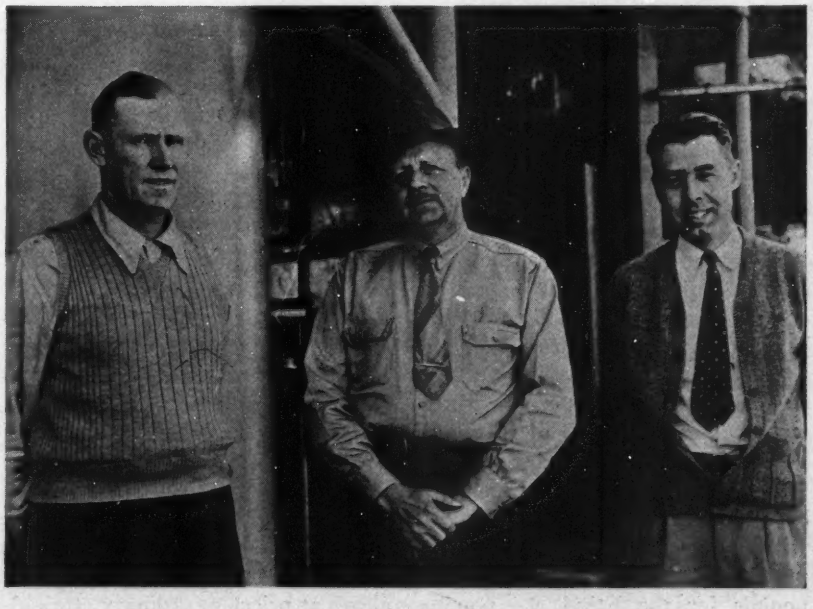
When the "little fellows" started changing over from batch operations to bubble cap towers, the reason was simply that of economy, the need for a relatively low cost continuous process to compete with the refiners who were pioneering in streamlined refinery operations and bringing down the cost of gasoline to the public. The automobile engine was not ready to appreciate the improved fractionation made possible by the multi-tray columns, largely because automotive designers insisted in laying out the fuel system in such a way that vapor lock was unavoidable with anything lighter than kerosene.

The automobile engine designer had produced an internal combustion system which would operate satisfactorily, for those days, on a wide crude oil cut loosely termed "gasoline." The federal government has always been critical about specifications and many motorists followed suit by demanding "Navy" grade, which had to have an end-point of not over 437° F. The gravity ranged from 56° Be. up to 62° Be. Certainly, the refiner had little to worry about in the matter of motor fuel specifications, and many continued to run their batch stills in areas where coal was cheap.

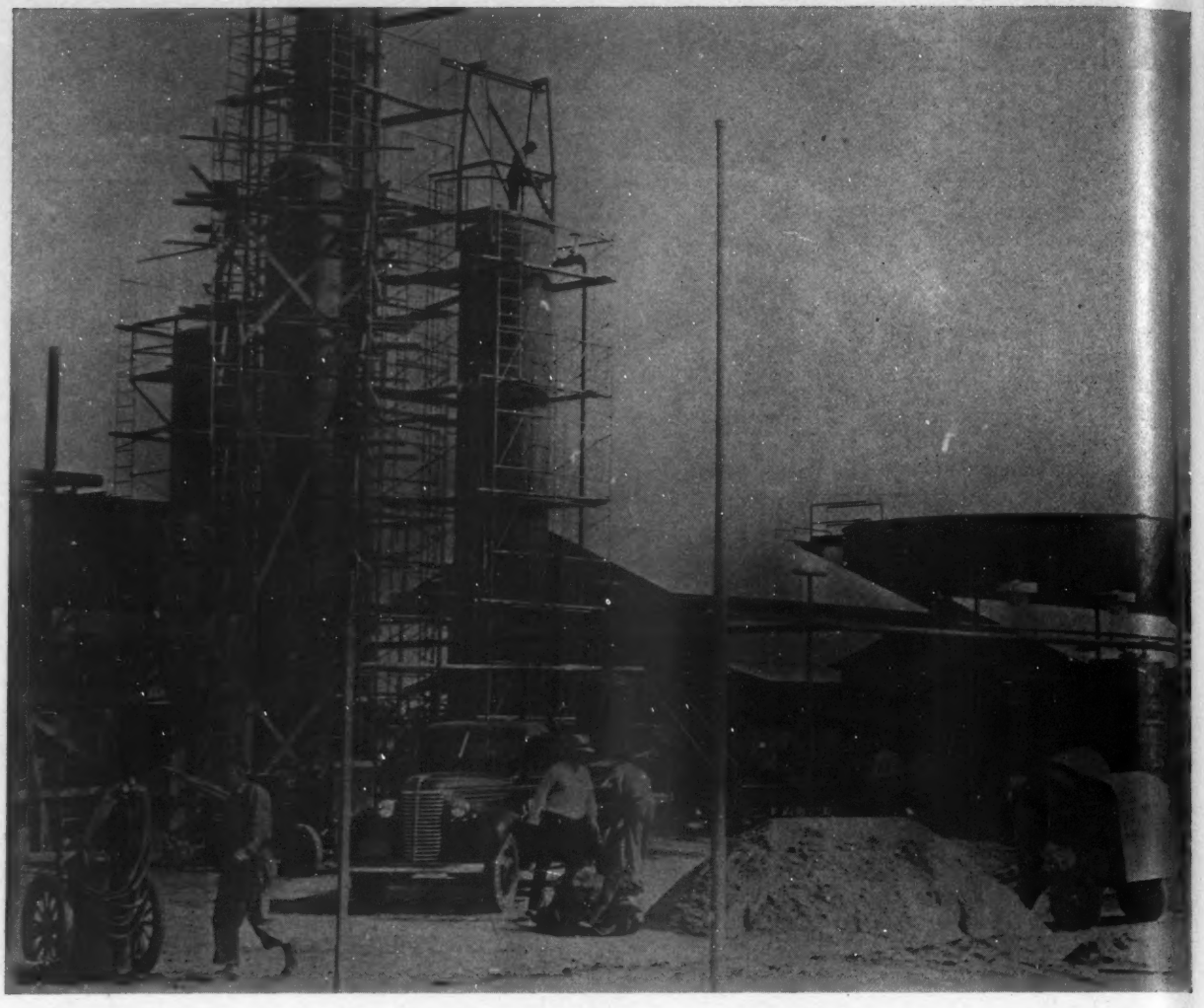
It was men like Kettering and Midgeley who decried the waste of energy in current automotive equipment that started the latest revolution in refinery operations. When refinery executives today decide to add cracking, polymerizing, hydrogenation or dehydrogenation facilities, the decision is certainly not based on reasons of economy. While these new processes are strongly favored as measures for conservation of an irreplaceable natural resource, the principal reason for modernization is the production of motor fuels far more effective and efficient than that of a few years ago. The automotive engineers are forcing the refiners to meet severe specifications by making over the components of crude oil, not merely separating them.



Bert E. Devere, general manager.



Left to right, Glenn Coiner, plant superintendent; Lucas Daams, construction engineer, and George Ehrhart, plant engineer.



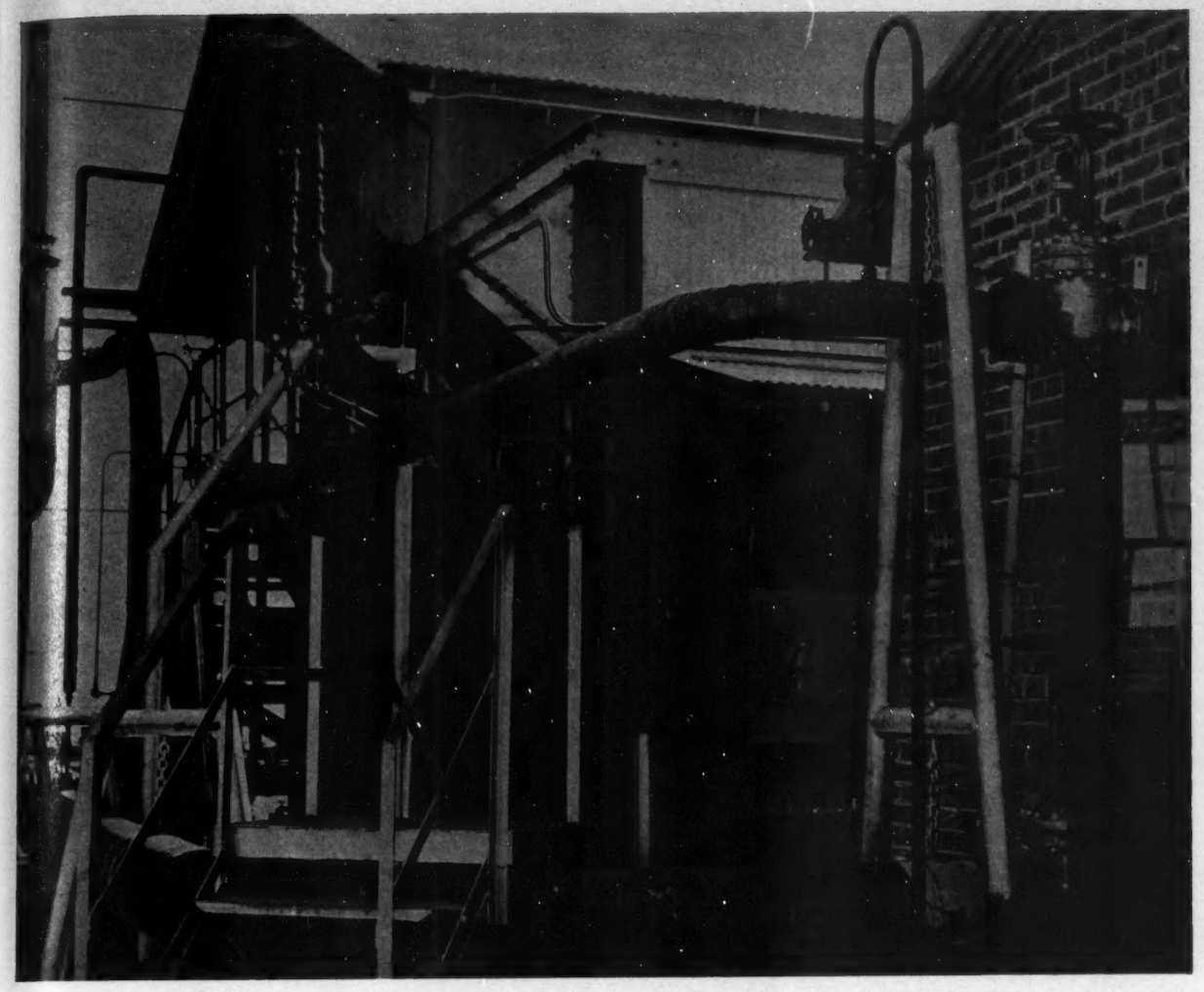
General view during construction.

In this race between the automobile engine designer and the refiner, what has happened to the "little fellow"? This question is answered when we test three samples from Pathfinder Petroleum Co.'s recently completed refinery, in Long Beach. The first big surprise comes in the knock testing engine (L3 Method). The Ethyl grade has an octane number of 82.2, the Pioneer grade an octane number of 76.6, and the Scout grade, an octane number of 73.2. The cheapest of the three was the premium fuel of just yesterday. The doctor and corrosion tests are negative, as they should be. Sulphur and gum tests are passed with flying colors, and the vapor pressures are worth noting: 7.4 pounds for the Ethyl, 9.4 pounds for the Pioneer, and 9.9 pounds for the Scout. The A.P.I. gravities are 58.3°, 60.1° and 60.9°, respectively, indicating excellent mileage. For old time's sake we note the Engler curve starts at 94° F. for the Ethyl and 80° F. for the Pioneer and Scout grades; the 50% points are 254° F., 250° F., and 251° F., respectively, and the endpoints, 383° F., 396° F., and 411° F., respectively.

From this it appears that the "little fellow" is very much in the race, in fact, quite a bit ahead of the automotive engine designer.

Bert Devere, general manager of Pathfinder Petroleum Co., has reached his first main objective in a nine-year drive to fulfill his dream of supplying independent retail outlets with the gasolines described above at prices of ordinary straight-run motor fuel. Pathfinder gasolines are marketed only through independent dealers and supplied to them by a network of distributors now in process of enlargement.. The emphasis is strongly on quality and fair dealing, and the retail outlets are hand-picked for these qualifications.

Mr. Devere is widely known in the independent field through his association with the El Camino Refining Co. The broad sales and marketing experience he gained in that connection has given him a first hand knowledge of the problems of distributor and retailer as well as a thorough understanding of the needs of the motoring public. He is also a highly trained technical man as evidenced by the fact that he laid out the engineering requirements for the new refinery, employed his own en-



Hot oil pump suction (below) and discharge (above) showing flow control orifice.

gineers and contractors, and constructed the plant in accordance with his specifications.

Representative Run:

The following table shows the results of charging 32° A.P.I. gas oil to the new plant.

Charge .....1001.78 bbls.
Yield:
400° E. P. 10-pound
gasoline ..... 591.19 bbls.
25 Sec. Vis. cracked fuel 270.31 bbls.
30 Plus Gravity furnace
distillate ..... 78.24 bbls.
Fixed Gas and Loss... 62.04 bbls.

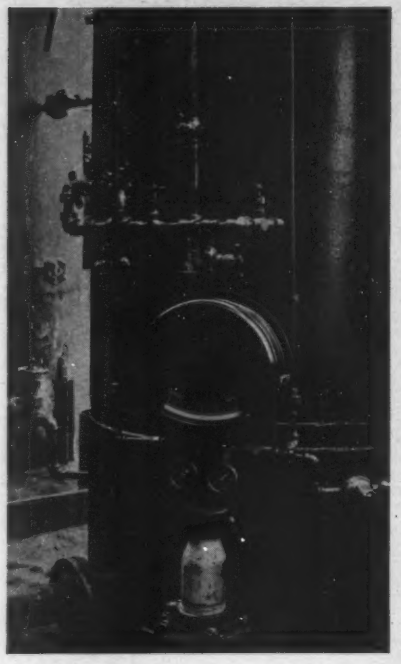
The fuel oil specifications are particularly noteworthy

Gravity .....8.0 to 8.4
Flash .....235 to 210
Vis.@122°F. in seconds, 29 to 25

The building and equipping of this modern plant for converting kerosene distillate and gas oil into premium motor fuels make interesting reading.

After all the necessary preliminary surveys were made and an adequate plant site had been acquired at Los Alamitos, near Long Beach, engineering work was commenced on March 15, 1939. By the 20th of June progress on this work had been sufficiently satisfactory to justify placing initial material orders and on July 10 ground was broken for the first structure. Thereafter work progressed rapidly. Due to the heavy weight of many of the towers and other structures it was necessary to drive piling to get the proper bearing loads and some delay was experienced during the first two weeks because of a harbor strike making it impossible to get the piling. The company acted as its own general contractor and all work was done through sub-contractors. All piling, excavating, concrete foundations and brick buildings were handled by the Pacific Crane and Rigging Co. The original schedule laid out at the time engineering work was started called for construction to be started July 1 and the plant to be completed ready for test run within four calendar months. Due to several delays in the first three weeks it was necessary to keep the job moving rapidly and by September 10 practically all of the heavy equipment was in place including the fractionating towers, boilers, pumps, etc. Pipe work started at this time with an average crew of sixty pipe fitters, welders, helpers, etc. being

employed. On Friday afternoon, October 27 all work including pressure testing of vessels and lines had

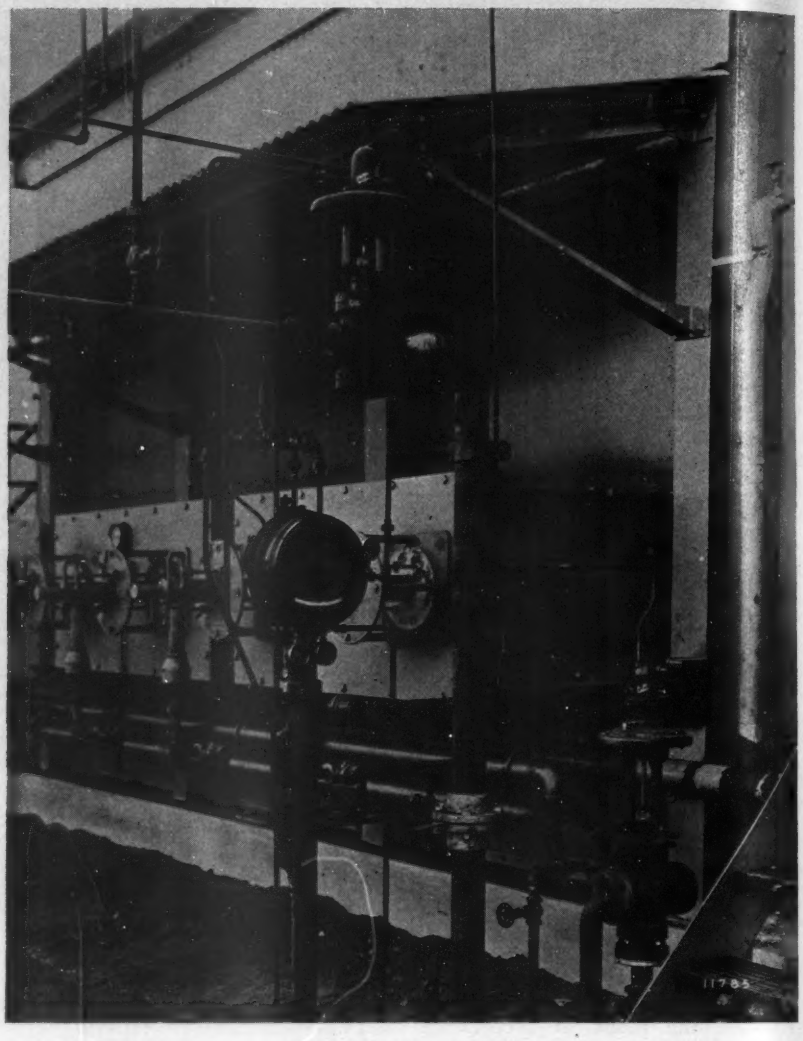


Foxboro averaging type liquid level controller, maintains a smooth flow to the stabilizer. On the gaseous products side, Natural Gas Equipment Co. controllers only are used.

been completed and a cold oil circulation test was made the following day. The unit was fired up on the afternoon of October 28 and put on stream Monday morning, October 30 without any difficulty whatsoever.

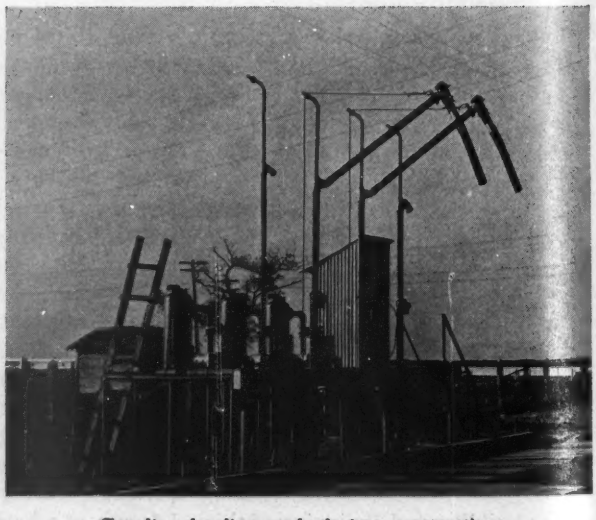
Equipment

The majority of the equipment in the plant is of standard design. The hot oil pump is a 4¼ in. x 12 in. du-



Cracking furnace control.

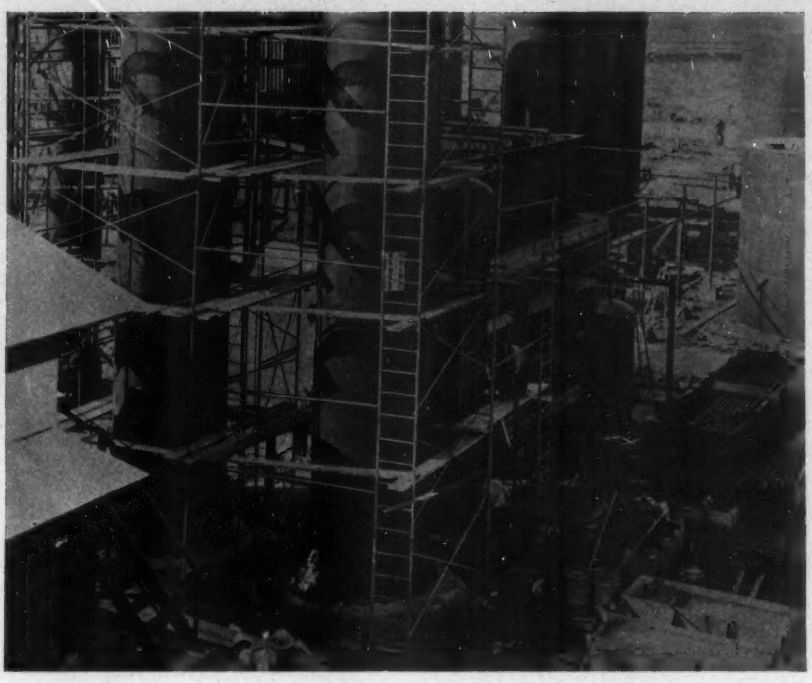
Main hot oil pump.



Gasoline loading rack during construction.

plex National Transit pump capable of handling oil up to 800°F. at 1000 pounds discharge pressure. This pump is driven by single cylinder vertical steam engine directly connected to the pump and has proved very satisfactory. All of the plant process pumps were furnished by the National Transit Pump Co. of Oil City, Pa.

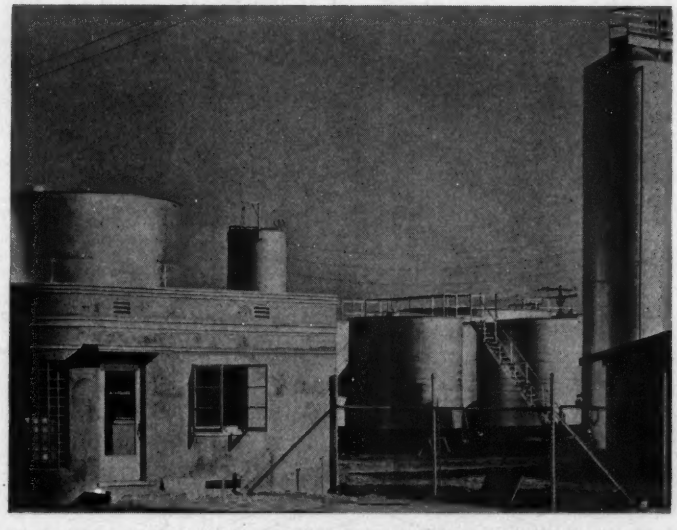
The furnace, built under contract by Alcorn Combustion Co. is their very latest designed double end fired heater with a combustion release of 25,000,000 B.t.u.'s. Furnace is designed for working pressure of 900 pounds at transfer line temperature up to 1020°F. and employs several different grades of alloy tubes and Key Co. headers throughout. All of the fractionating and condensing equipment, including the main bubble column which weighs 100,000 pounds, was fabricated by the Southwest Welding Co. of Al-



Separator and main fractionator in foreground. Control house, condenser box and fuel oil pump and cooler in background.

FOR CRACKING PLANTS

WE ARE EQUIPPED TO MANUFACTURE AND INSTALL



All Tank Storage Units for the recently completed Refinery of Pathfinder Petroleum Company were erected by California Construction Co.

- ALL TANK STORAGE UNITS
- STEEL ETHYL BUILDINGS
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- COMPLETE PIPING SYSTEMS
- LOADING RACKS

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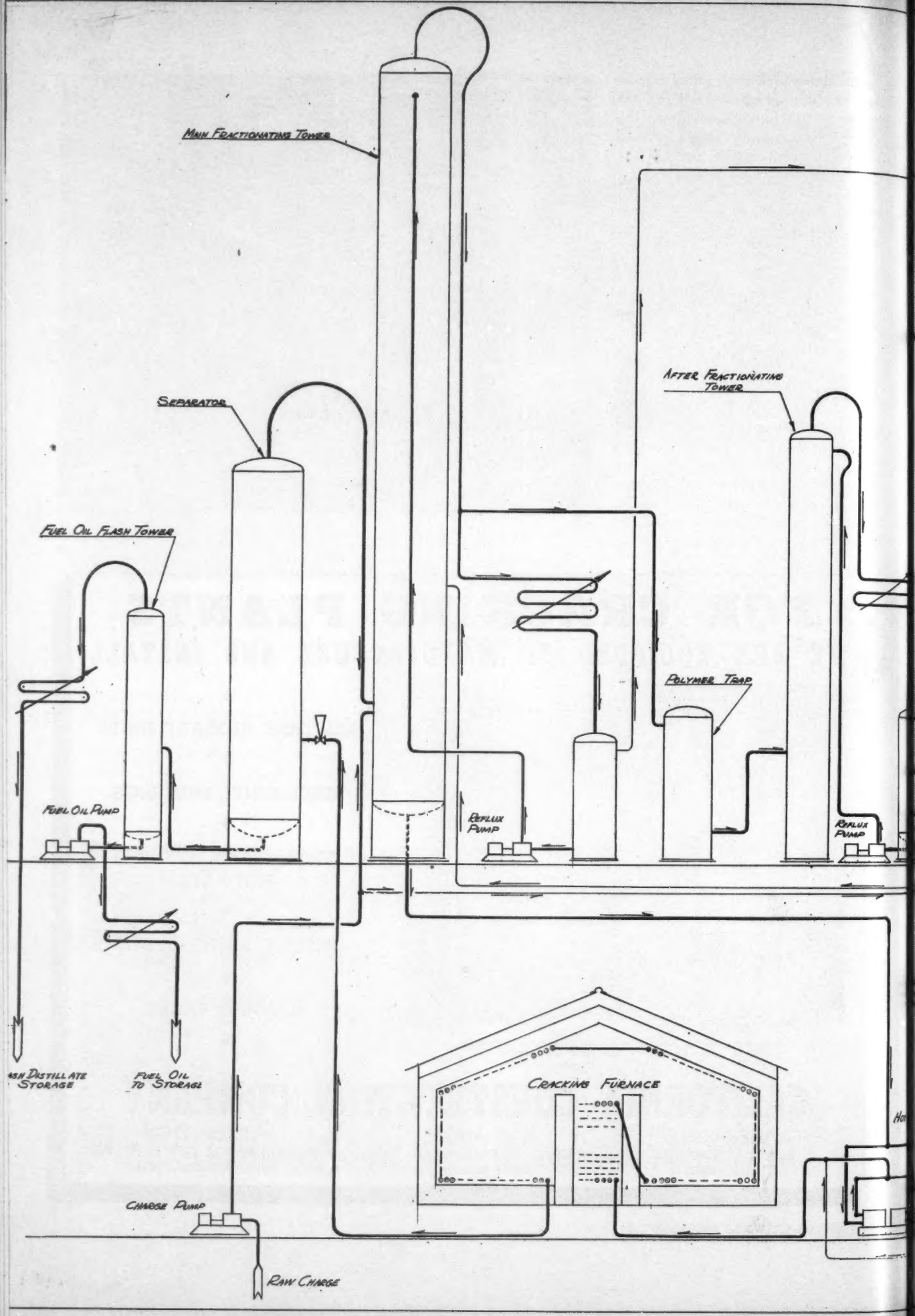
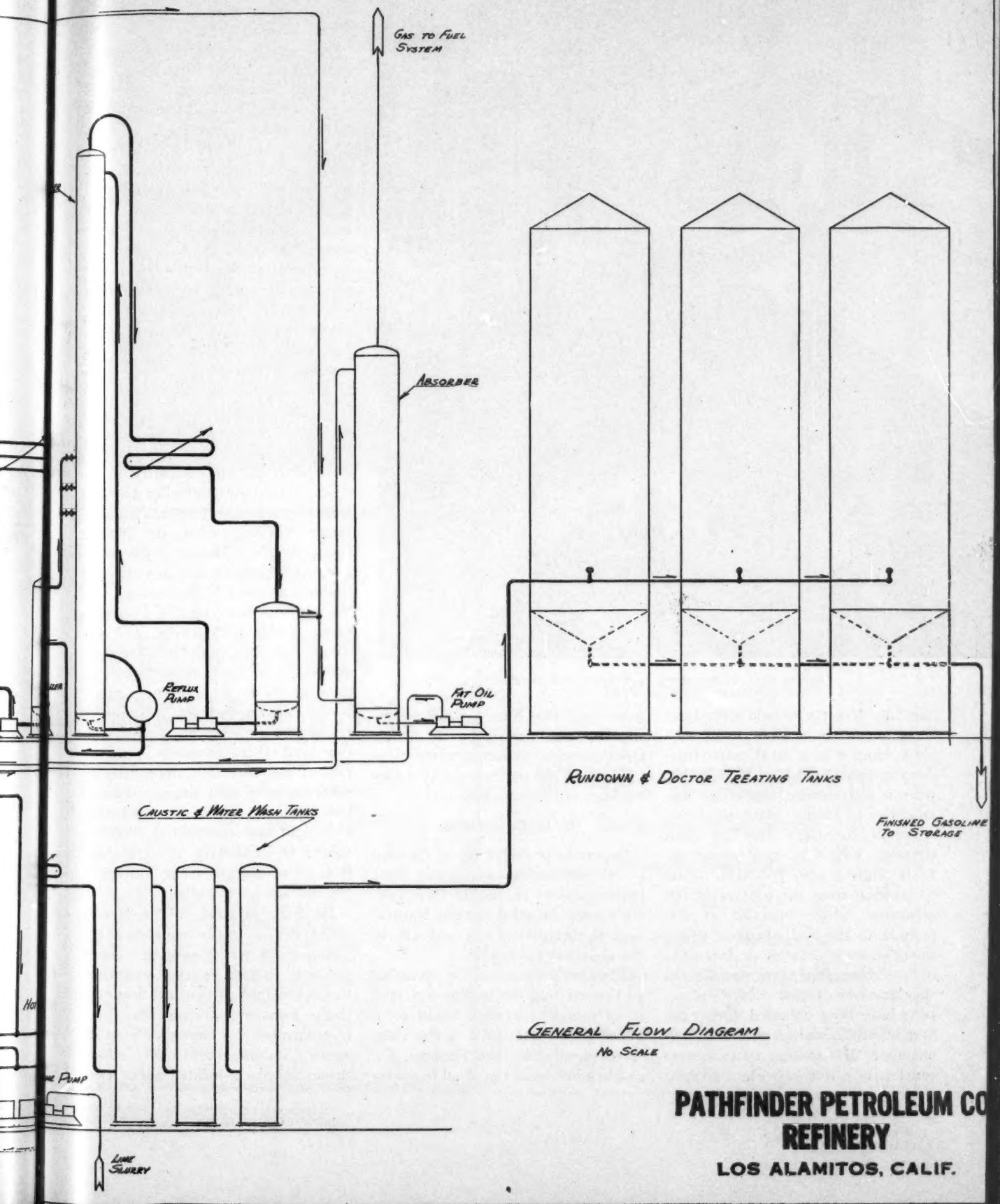

Main Fractionating Tower
After Fractionating Tower
Separator
Fuel Oil Flash Tower
Polymer Trap
Fuel Oil Pump
Reflux Pump
Reflux Pump
Fuel Oil to Storage
Cracking Furnace
Charge Pump
Raw Charge



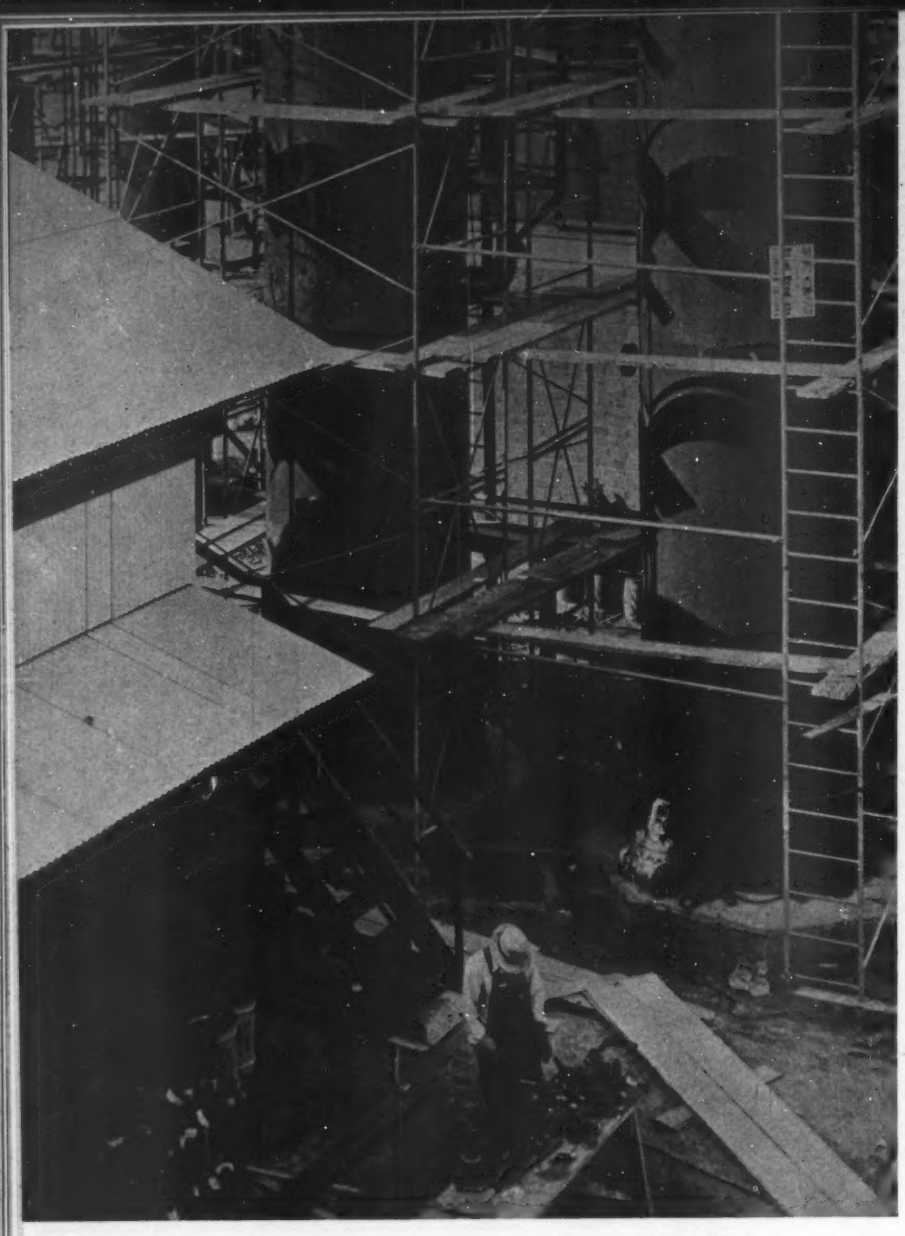
GENERAL FLOW DIAGRAM

NO SCALE

PATHFINDER PETROLEUM CO

REFINERY

LOS ALAMITOS, CALIF.



Left to right, heater, main fractionator and separator.

hambra. Vessels include a fractionating tower 6 ft. x 30 ft., main bubble column 6 ft. x 70 ft., after-fractionating column 4 ft. x 40 ft., along with a conventional stabilizer and absorber to handle plant products. A small secondary fuel oil flash chamber 3 ft. 6 in. in diameter by 15 ft. high is also provided. Fuel oil passing from the bottom of the separator, which operates at 100 pounds, to the flash chamber where the pressure is dropped to 20 pounds or less depending upon the fuel oil specifications desired. Excellent results have been obtained during the first month operation with the flash chamber. The cooling water system consists of a five bay Fluor cooling tower and two 5 in. x 5 in. centrifugal pumps driven by 20 horsepower electric motors provide close to 100 gallons per minute of water cooling and circulation.

N. G. E. Controls

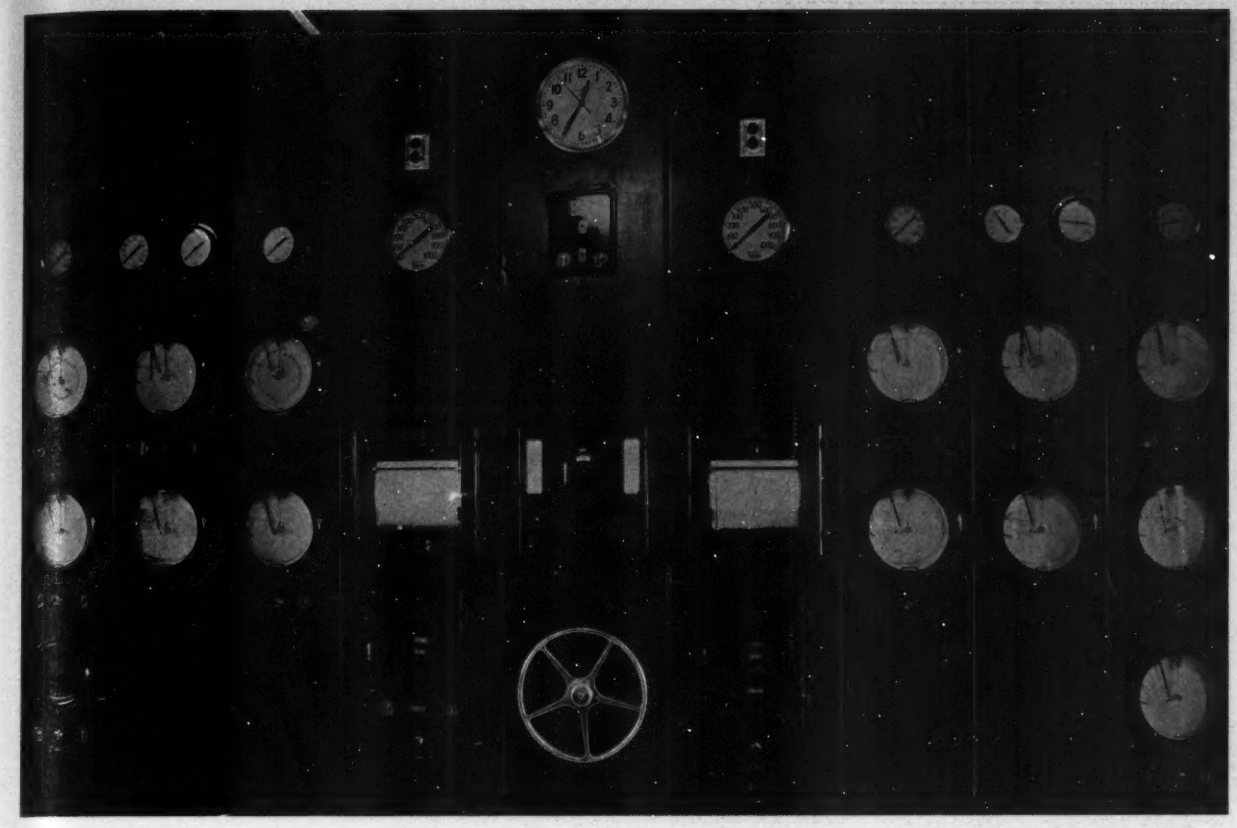
Steam is provided by a conventional 500 horsepower water tube boiler. All of the liquid level controls were supplied by the Natural Gas & Equipment Co. and are of the conventional type.

The instrumentation for operating and controlling the unit as provided is as complete as any found on a plant of this size. All of the units were supplied by the Foxboro Co. and in addition to the usual temperature pressure and flow recorders and controllers there is included a full automatic firing control for each side of the furnace. (As fas as is known this is the first time this type of control has been installed on the Pacific Coast.)

The Foxboro controlling, recording and indicating instruments are used in this plant, in a manner which enables the operators to ascertain almost any rate of flow, temperature or pressure. This, in turn, makes it possible to detect any irregularity in the unit, trace it to it's source and do whatever is necessary to correct it before it causes serious trouble. Stabilog temperature and flow controllers are used throughout together with wide flow ratio stabilflo valves.

Perhaps the most interesting control application is found on the cracking furnace itself. Here, the heating section is fired separately from the soaking section and the fuel gas is manifolded to each end of the furnace with a flow controller, controlling the total quantity of gas used. The flow controller has it's control point re-set by a Potentiometer Stabilog Controller whose thermocouple is located in the crossover line between the heating and soaking sections of the furnace. In the air line between the Potentiometer Stabilog Controller and the flow controller, an Impulsator is connected. This Impulsator can be considered as a pressure relay, which, on the slightest deviation of temperature, makes an over-correction and then gradually removes part of the correction, depending on what happens after the over-correction is made. It will be noted, that although the controlling thermocouple is located in the crossover line, all of the gas being burned in the furnace is controlled.

In order to split, in the correct ratios, the gas to the two ends of the furnace, a 3 way diaphragm motor valve is located in the main fuel line below the orifice of the flow controller mentioned above. This valve is controlled by another Potentiometer Stabilog controller whose thermocouple is located about two-



Main control panel.

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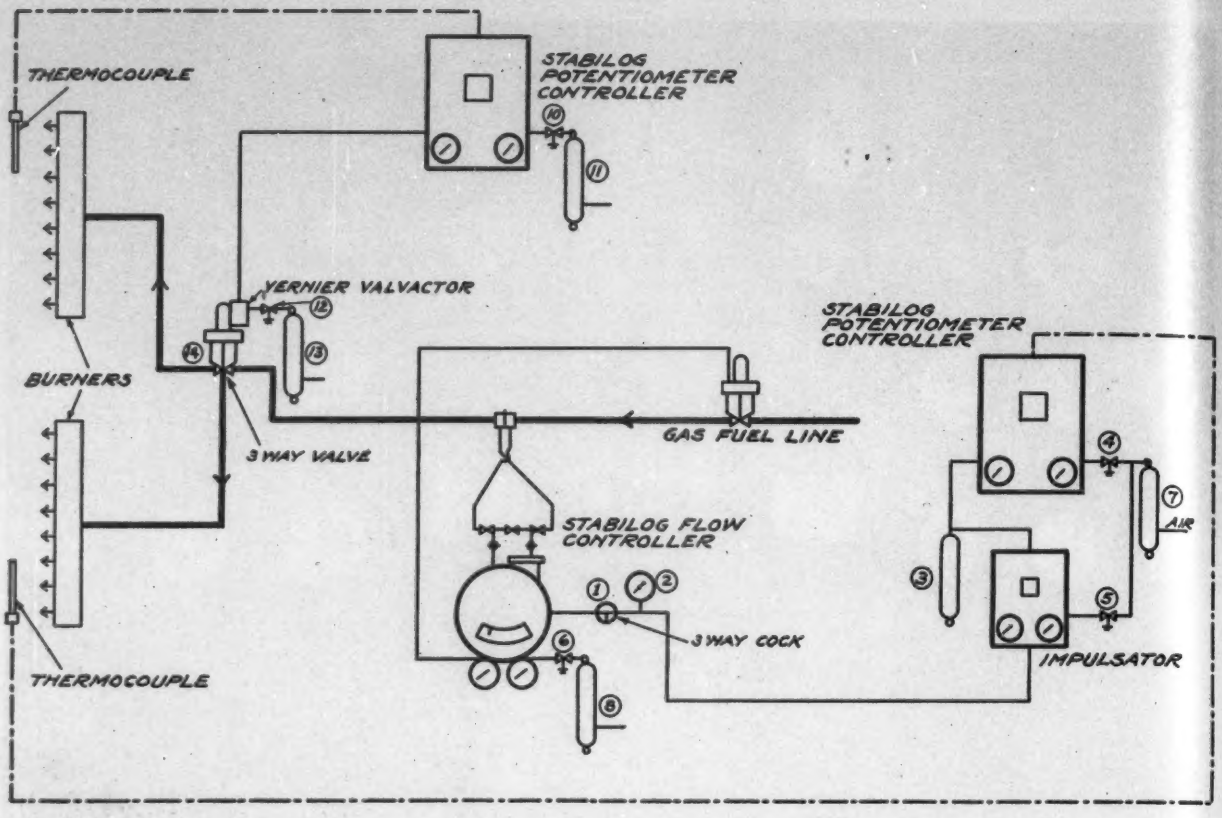

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Section of the cooling tower (left) and rundown tanks in center.

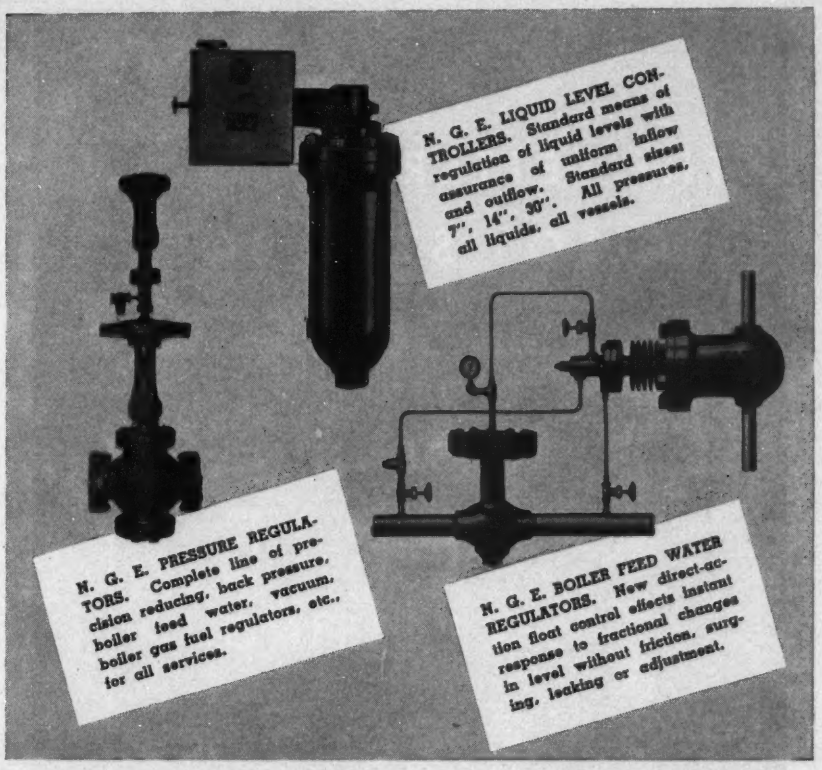
thirds of the way through the soaking section.

Any impulse which causes the gas flow to change suddenly is felt by both the heating and soaking sections, for any change in crossover temperature immediately changes the flow gas, not only to the heating side, but also to the soaking side. Any change in the temperature at the outlet of the heating side must, a few seconds later, affect the temperature at the outlet of the soaking side; so an anticipatory action results which, not only maintains transfer temperatures, under ordinary operating conditions, within 1°, but which, when an upset occurs, brings the transfer temperature back to the correct point in an amazingly short time.

It is possible, with this arrangement, to change easily and quickly the temperature control point at either the crossover or transfer line without making any manual adjustment on fuel valves.

Gasoline loading rack showing meter Installation.

The treating plant equipment is of the company's own design and among its novel features are included vertical pressure storage tanks which serve both as receivers and treating tanks. These tanks are all provided with automatic gauges so that at no time is it necessary to release the pressure to gauge them. The quantity of gasoline in the tanks is read immediately from gauges attached to the side of the tank at eye level. A completely equipped laboratory capable of making every test necessary to properly control specifications of products is located immediately adjacent to the treating plant. The company has also installed an Ethyl plant at the spur track on the rear of the property and is now making a complete line of gasoline. An office building at the property entrance provides the necessary space for the superintendent, engineers and accounting department. The sales and executive offices are located separately in Los Angeles.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HOUSTON SAN FRANCISCO

The company's corporate setup includes the following officers and directors: H. A. Meek, President; J. V. Pohl, Vice-president; B. E. Devere, Treasurer and General Manager; E. G. Whitehead, Secretary and W. H. Brownell, Director. Salesmanager is Don W. Wallace. Included in the technical staff are Lucas Daams, engineer in charge of construction; George Ehrhart, plant engineer and Glenn Coiner, in charge of plant operations.

Before closing let's get acquainted with the men who run the refinery. First, Bert Devere—Born in New York City—1904. Came to California in 1920 and finished school at Hollywood and U. C. L. A. From 1920 to 1926 he worked at various jobs with oil companies after school and during summer. Studied geology at U. C. L. A.

Left school in February, 1926 to go into gasoline distributing business and built up substantial marketing organization from 1926 to 1929—Sales 1,000,000 per month in 1929.

Need for additional supply justified building refinery and plant started in September 1929 and put into operation in November 1929. 4000 bbl. topping plant.

High crude oil prices and low gasoline prices from 1930-33 made this operation unsatisfactory and plant was leased for a period of years and finally sold and is still in operation.

Continued marketing business and re-entered refining in 1937.

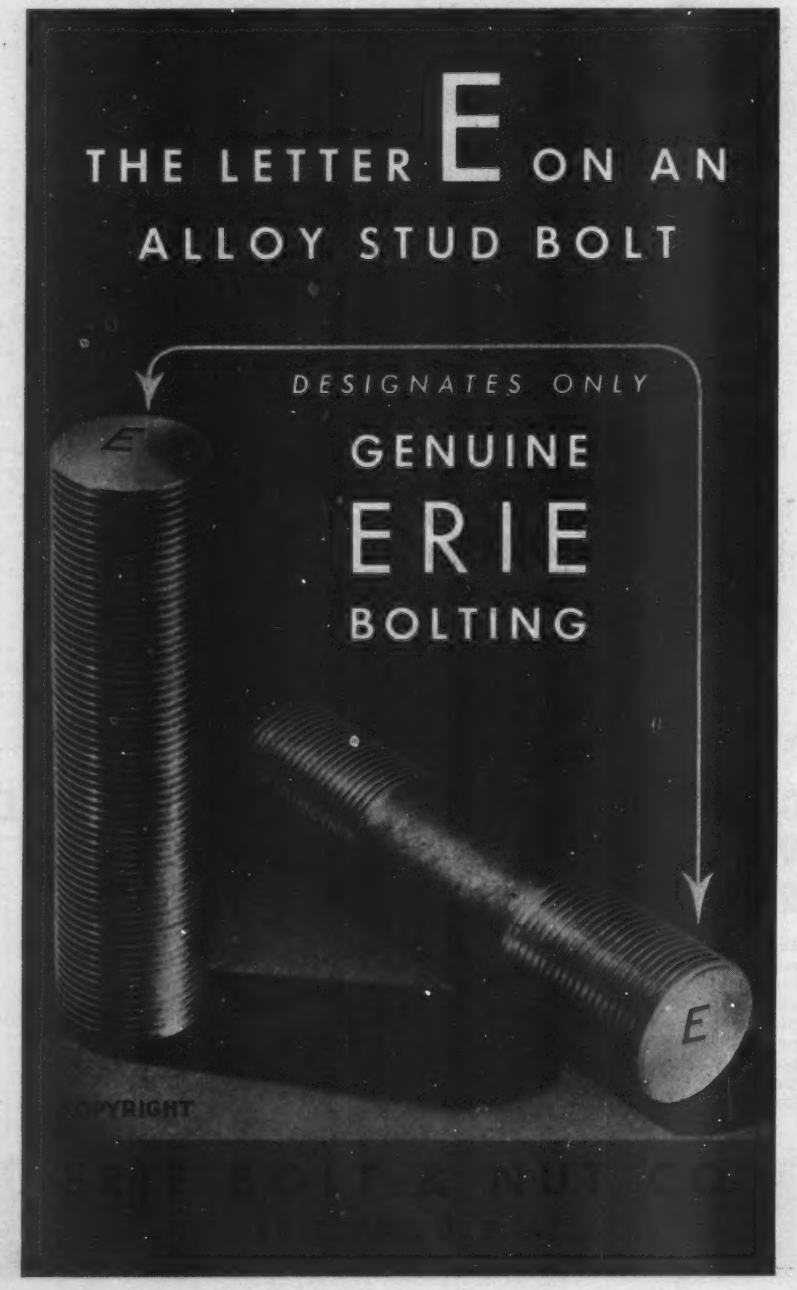
Recognized need for higher quality gasoline and felt that it justified cracking operations. Result, the new refinery.

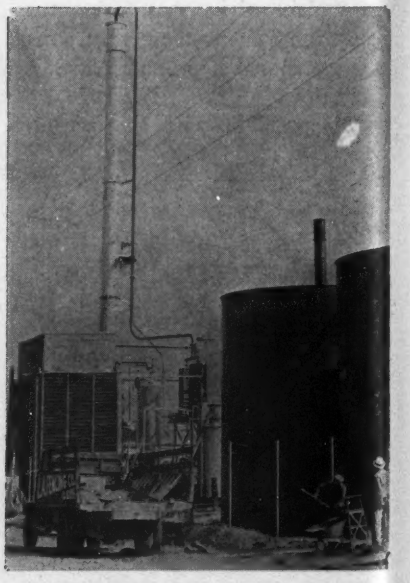
Lucas Daams — Mechanical Engineer: Entered the oil industry in 1913 starting with the Astra Romana, a subsidiary of the Dutch Shell in Rumania.

Came for the Shell to the United States in 1914 and was in charge of refinery construction work at Martinez, California, Cushing, Oklahoma and Wood River, Ill. Then went for 3 years to Dutch East Indies and was there at Farakan and Balik Papan on the East Coast of Borneo.

Returned to the U. S. in 1923 and was associated with M. J. Trumble for several years in charge of re-

(Continued on Page 34)





Fencing in the plant.

Rich stores of a great naval essential, oil, are within yards of the Navy ships based in the Harbor. This picture, shot from the parking lot at the Navy landing in Long Beach Harbor, shows a portion of the now famous Harbor Field.

Drilling the edges of Buena Vista lake entails costly and painstaking preparation. Richfield Oil Corp. drove this piling at the easterly edge to keep B.V.A. No. 1 out of the water which hides the pier in flood times.

(Continued from Page 7)

completion, but continued to discourage east end drilling.

Superior Oil Co. and Holly Development Co. each gave up Coalinga tests which proved unfruitful. Bandini Pet. Co.'s No. 48-18 still searched for the Gatchell sand far below the expected levels.

Buttes Oil Fields, Inc., completed a Sutter County gasser flowing 22,500,000 cubic feet daily.

Standard Oil Co. completed its so-called "gasoline well" at the west edge of Cole's Levee production. The well, No. 20-1, flowed 2200 barrel rate 53 plus gravity oil.

Richfield Oil Corp. closed on a 51,-000 acre lease in the lower San Joaquin valley which is expected to call for several test wells. Its KCL No. 1, atop Wheeler Ridge was still making unsuccessful tests of the deep zones.

Ridge Oil Co.'s Seacliff No. 1, wildcat on the hills west of Montebello is standing idle after recovering salt water on a formation test to bottom at 8039 ft. This washed up the hopes of finding the equivalent of the 8th zone productive west of the points indicated by field contours.

Silhouetted against the sea is a decadent old timer one of whose legs has been worn away by the rolling rocks of the beach. Like piling without a wharf, casings of scores of forgotten wells stand up out of the shallow waters of Summerland bay. The knobs topping the two at the right of the derrick are pelicans, a large flock of which vie with the seagulls for control of the situation.

AUGUST

Bandini Petroleum encountered the Gatchell much lower than expected, in its Coalinga Northeast try, thereby confirming the suspicion that the Turritella silt thickens tremendously to the west in the district. The try flowed more than 30,000,000 cubic feet of gas and 500 barrel rate 52 gravity condensate on a water shut off test of the 7 in. cemented at 7975 ft. Union Oil Co. had also entered the Gatchell in its first well, and was preparing to complete.

Meridian Petroleum Corp. was making tests of deep zones under the Fruitvale field. The well was bottomed in questionable Vedder sand at 7565 ft.

At Greeley, two Standard Oil Co. wells, KCL Nos. 11-18 and 11-19, were coring the recently uncovered Rio Bravo oil sand, a little below 11,350 ft.

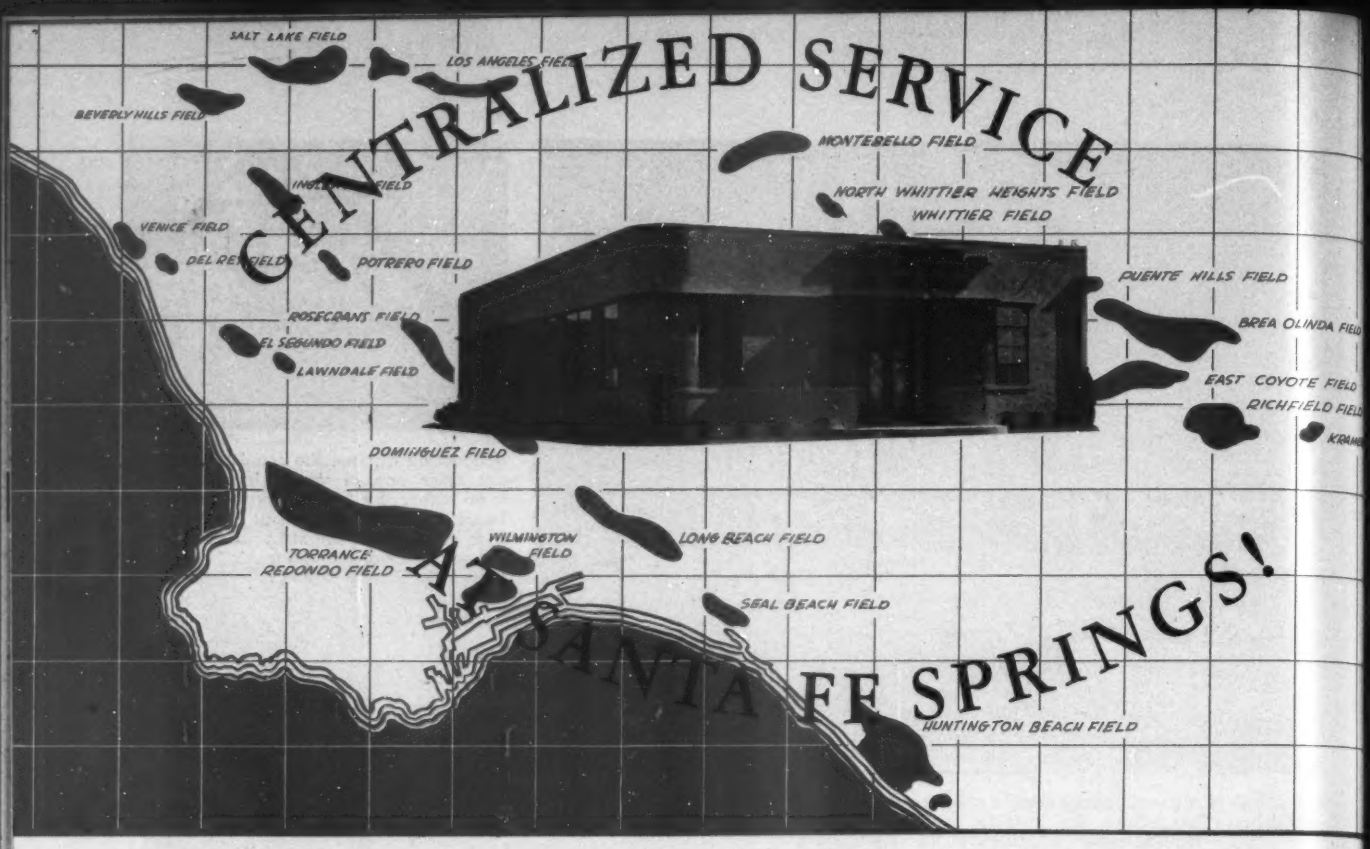
In the Dominguez area, Union Oil Co. completed its most northwesterly outpost, Callendar No. 70, flowing 1100 barrels clean 32 gravity from 7353 ft. through a half inch bean.

Tide Water Associated Oil Co. plugged and completed Porter No. 11 in the Aliso Canyon field. An area in which only Tide Water has been able to find production. The well made 1100 barrel rate flow of 22 gravity through a 36/64 bean from 5150 ft.

California Lands, Inc. abandoned a deep test at Lost Hills. The well, known as Occidental No. 2, discovered the equivalent of the deep, productive Belridge sand to be barren at 8320 ft.

SEPTEMBER

Standard Oil Co. completed Corcoran No. 1, flowing 15,000,000 cubic feet of gas in sec. 29,9n-1e of Yolo County.



The new and modern office building of the S. R. Bowen Company, Lakeland and Norwalk Roads, Santa Fe Springs

To serve oil operators both in California nd overseas more efficiently, S. R. Bowen Company announces transfer of its main ffice and warehouse from Huntington Beach Santa Fe Springs, California. Recent completion of the modern office building and arehouse will centralize and greatly increase e service and business facilities of the organization.

he Santa Fe Springs location now constites the central distributing point from which e five other Bowen Service Stores in Calirnia obtain their stock of Bowen Fishing ools and Specialties. The Sales, Credit, Purasing and Accounting Departments occupy e new office building, which also has arngements for exhibiting the complete line of owen Oil Tools.

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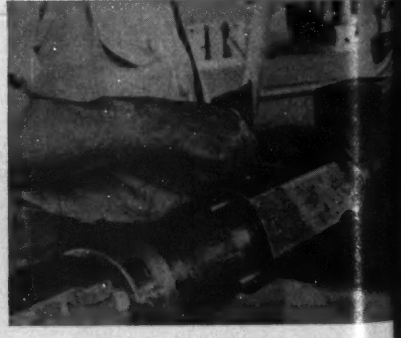

All worn parts are replaced with new ones, a piece is double-checked to make sure it's in prop ing order. Bowen doesn't take any chances he tool is kept in first-class condition all the time. what makes Bowen tools dependable on any

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Seaboard Oil Corp., Tide Water Associated Oil Co. and Union Oil Co. made location for a joint test in Merced County which was ultimately drilled to a barren 7074 ft.

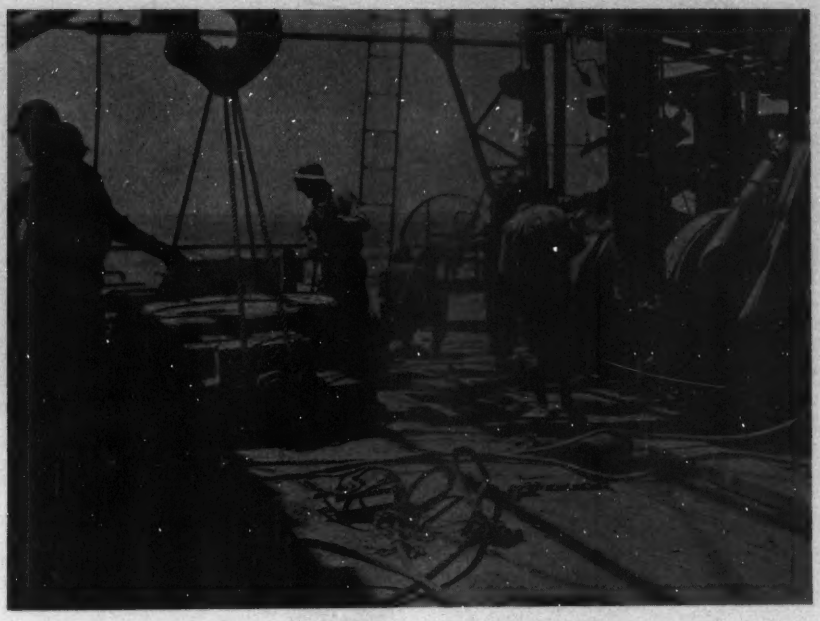
The Cantua Creek area of Fresno County lost the last of it's drilling projects when Richfield Oil Corp. abandoned Turk No. 1 in barren Cretaceous shale at 7900 ft.

The Texas Co. and Amerada Petroleum Corp. joined hands to drill a test on the large acreage held by Amerada in the Devils Den area. This test, made upon leases long thought to be promising, was finally abandoned at 3491 ft.

Milton Thompson built derrick to drill on the Mesa east of Huntington Beach. Properly called Costa Mesa, the area had shown promise of oil bearing sands in tests previously drilled by others.

Compass Oil Co. erected derrick for a Pixley district test which, abandoned in December, found the schist near 4320 ft.

Superior Oil Co., continuing northwesterly development at Rio Bravo, located a new structural high when Burner No. 1 topped the Rio Bravo sand at 11,167 ft.



Rigging up to drill a deep valley test is not a one man job. Pictured here are but a few of the men readying Tide Water Associated Oil Co.'s No. 81, a Cole's Levee outpost.

OCTOBER

The opinions of wiseacres who held that the central portion of the Wilmington field was weakening, were confounded when Union Pacific Railroad Co. completed No. 120 flowing 5400 barrels of 31 gravity oil, showing too little cut to figure, from 4021 ft. The field, which last year produced nearly 14 percent of the state's entire petroleum output, more than any other single field, has shown practically no decline and is one of California's most reliable reserves.

Standard Oil Co. completed No. 2-19J from the Eocene formations at Kettleman Hills. Coming from what is known as the McAdams sand, the well made more than a thousand barrel rate clean 40 gravity oil from 10,950 ft.

Trico Oil and Gas Co. extended the Trico gas field in a northwesterly direction when Newland No. 1 was completed flowing 18,000,000 cubic feet of gas from 25 ft. of formation open to bottom at 2512 ft.

Southern California Petroleum Corp.'s Slabaugh No. 1, in the faulted and unpredictable Rosecrans field, came in flowing 250 barrels daily from a 171 ft. interval to bottom at 7641 ft. The well, ostensibly a small producer, became the surprise well of the area when a potential test made known the fact that the well was considered capable of producing 1000 barrels daily of 32 gravity oil.

California Western Oil Co. was building rig for Larrondi No. 1 at the extreme northwest flank of the Dominguez field. Completed in December, under the name of R. E. Havenstrite, operator, the well initialed nearly 1100 barrels of 31 gravity oil from a plugged depth of 7500 ft.

Farthest left is Tide Water Associated Oil Co.'s Porter No. 11, which was completed for 1500 barrel yield after grinding slowly to 5239 ft. in the hard formations of the Aliso Canyon Field. Continuing, left to right is, Tide Water's Porter No. 1, discovery well, Standard Oil Co.'s barren H. R. Ward No. 1 and Union Oil Co.'s equally dry S. S. Orcutt No. 1.

NOVEMBER

Wilshire Annex Oil Co. indefinitely suspended operations on well No. 64-30B after swabbing operations from a plugged depth of 8372 ft. recovered only hot fresh water. Located in sec. 30, 19-16, approximately in the center of the three and a half mile unproved area separating the Coalinga Northeast and Eocene Pool fields, the well was expected to establish connecting production.

Several large completions were registered at Santa Maria Valley as the

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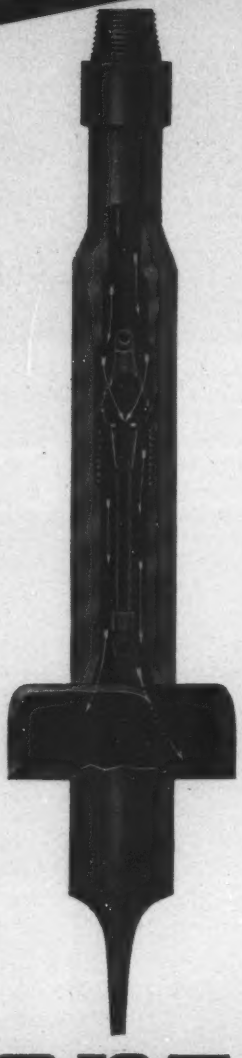

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protects vital inner parts from being worn by sand laden fluid—minimizes destructive action of sand by causing it to impinge upon itself as indicated by arrows in cut-away section.

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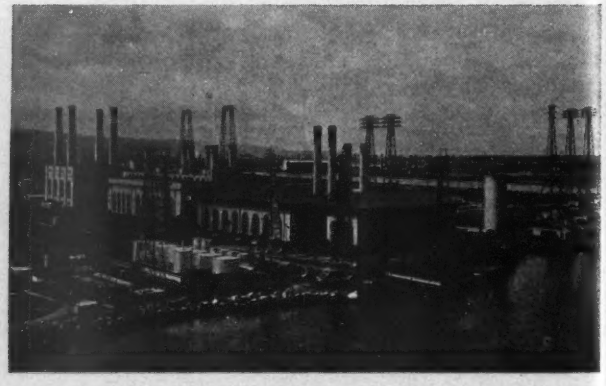
Still defying the elements, this veteran stands as the sole survivor of a line out to sea. To the right, note the three strings of casing, one within another, which are now only a headstone for a once commercial pumper, one of the first tideland producers. In the gay Nineties, Summerland was a popular summer resort combining an ideal climate with one of the world's wonders, a submarine oil field. Nowadays sub-sea drilling is done by whipstocking from an upland location, eliminating the hazards and expense of piers.

Picturesque indeed is Summerland, one of California's oldest oil fields. Discovered in 1894, its alltime production peak was reached five years later when annual yield was 208,000 bbls. Three generations of wells are here represented, the tripod on the beach being the earliest while the small derrick to its right and the 80 ft. rigs on the pier depict succeeding steps. The modern looking wells were drilled by Geo. F. Getty, Inc. in 1928 and 1929.



Prolific producers drilled on Edison Co. lands at the site of the company's huge steam electric plant just south of the turning basin in Long Beach harbor.

Note the placement of the hydromatic brakes on the draw works used to drill Geo. F. Getty's Jannsen No. 1 at Wasco. The Philcophone seen above the drillers head makes it easy to converse with the derrick man, or the dog-house.

semi-windup of a minor drilling flurry. E. H. Lomas' Reg No. 1 came in flowing 4800 barrels, while Union Oil Co. hung up two wells for 3500 barrel outputs and W. R. Gerard finished his project flowing a like rate. Gravities varied from 14 to 16 points.

Taking a decided step from Long Beach production, The Caminol Co. started work on Dominguez No. 3-19. Located on the flat lands beside the Los Angeles River bed, northwest of what is known as the Extension area, the close of the year finds the well drilling below 7200 ft.

Failing to find the Gatchell sand present and recovering nothing from a test of Arroyo Hondo showings at 7250-7370 ft., Standard Oil abandoned Eocene Pool well No. 62-13C. Situated at the west center edge of the field, the well clearly defined, at this point, the productive limits.

DECEMBER

A syndicate of companies, headed by General Petroleum Corp. spudded Was No. 1 in the Santa Ana district. The location, in the northeast quarter of sec. 21,5-10, was chosen on the basis of geophysical data and confirms a long standing opinion that there are oil possibilities in the area.

Another test of an area long suspected of oil possibilities but comparatively undrilled, was assured when Shell Oil Co. started work on Cohn Estate No. 6-4 at the west edge of Tulare Lake.

Vedder sands were proved productive at the southerly limits of the Greeley Field when Standard Oil Co. deepened and completed Ross No. 1. Proved barren in the Greeley sand, from which south edge production had here-to-fore been obtained, the well flowed 1700 barrel rate on water shut off tests of 7 in. casing from the deep Vedder. Completed from only 6 ft. open to 11,524 ft. the well went on production at a 300 barrel rate 35 plus gravity oil, through a 13/64 in. bean.

After a continued struggle with tightly packed sands encountered in 860 ft. of open interval, R. W. Jerman had put his 10,411 ft. Signal Hill well on stream. Officially known as Dormax Oil Co.'s Dormax No. 1, the well flowed 300 to 500 barrels daily on gas lift.

At the southerly limits of the central portion of the Wilmington Field, a 6901 ft. hole encountered the schist at 6886 ft. The well, Royalty Service Co.'s Nelson B-7, was plugged to 5755 ft. for tests of the Ford zone.

At Rosecrans, Barnsdall Oil Co. was recementing casing prior to testing what were reported to be promising sands and Dr. Geo. G. Averill was swabbing for production in his outpost try.

Death Takes Joseph A. Dunn

The death late in December of Joe A. Dunn, division manager of National Supply Co., was deeply felt by the entire Pacific Coast oil industry.

The esteem in which Joe Dunn was held by oil men was shown when Frank A. Morgan, vice-president of Richfield Oil Corp. at the conclusion of the Wildcat banquet Dec. 20, expressed the feelings of those present. The lights were dimmed and a very fine picture of Joe Dunn was thrown on screen in the presence of 1700 men in the oil industry. It was so quiet you could hear a pin drop.

"Joe Dunn, fellow Wildcat, Master of Ceremonies, Master of friendship and cheer, Master of industry. Joe's philosophy of business was, in spite of all odds, to carry on with a smile.

Joseph A. Dunn

"This he would have us do in this business of tonight and this we will try to do for him and for you—without our Master of Ceremonies—Joe Dunn.

"We will stand for a few moments in silent tribute to Joe Dunn—Good-bye, Joe."

Joseph A. Dunn, born in Alexandria, Virginia, October 22, 1895, leaves his wife, Elizabeth Dunn, and a daughter, Betty Ann, 14 years old, and one brother, Ralph A. Dunn.

Joe came to California in 1913, when he entered the California oil industry, and continued in that work until 1918 when he went to war and came back from over seas with the rank of Lieutenant of Infantry. Following the World War, he was employed by the Western Union Oil Co. as tool pusher and superintendent, and thereafter was employed by the Shell Oil Co. until 1924 when he joined the staff of the National Supply Co. At the time of his death he was Division Manager in charge of California sales for National Supply.

He was a prominent member of the Wildcat Committee of the California Oil and Gas Association, and was president of that organization in 1935. He was the perennial Master of Ceremonies at the Wildcat Annual Jinks, and was widely known to all California oil men from the executive offices to the roust-abouts in the field.

Leonardo da Vinci's mechanical inventions included printing presses, an oil press, screwcutting lathe, and pile driver with automatic release.

LAUGH THIS OFF

With the advent of the festive season we would caution oil workers everywhere not to be too optimistic. We know a Santa Fe Springs lad who hung one of his socks on the Christmas tree, and all he got was a notice from the health department.

Also, may we again repeat that we still have a distant preference for shirts with stripes in them, ties with dots in them, and envelopes with checks in them.

Dave Kilgour, by the way, tells us that the practice of exchanging Christmas gifts was first suggested by a Scotch haberdasher named Sandy Claus.

Recalling a very quaint old Christmas conundrum: Question—Why do **Geo. Tyler** and Santa Claus look so much alike? Answer—Because they both have long white whiskers, except George.

Returning to the Christmas topic, do you remember the good old days when we used to sit around a blazing fire roasting chestnuts. Now we sit around a blazing fire roasting the neighbors, and save the chestnuts for this column.

Here, for instance, is one of them submitted by **Chet Yunker:** According to Chet, there are three kinds of people in the oil business. Those who whistle while they work. Those who just work, and those who just whistle.

And from our San Francisco operative comes a new story about **Bill Ackerman,** the well known Bay City nautical expert. Bill has developed a new technique for controlling ship, captain and crew, through which he has been awarded the colorful moniker of "Four Roll Bill." The thing is very simple. He just speeds up the scattering system, and manages to get in an extra roll, if you don't watch him closely.

Jim Roggie now chips in with a seasonal yarn that he claims is based on actual fact: A helpful laddie knocked at the McBagpipe's door on Christmas morning, and shouted cheerfully (and hopefully), "Merry Christmas, Mr. McBagpipes, I'm the man that empties your garbage can." Came the equally cheerful but disappointing reply, "The same to you, ma lad, I'm the man that fills it."

Investigation of the report that a local dentist was drilling a wildcat, determined the fact that he was simply doing a little work on **Frank Morgan's** teeth.

When we asked a local dentist recently if he had always followed the dental profession, he answered, "Oh, no. I used to be a riveter, but it made me dizzy to work so high."

Personally we have always felt that these lads lead pretty much of a hand to mouth existence.

Frank Coyle next interrupts to tell us about a Wilmington pipe-liner who purchased a lot a few minutes ride from the city, and forgot to ask what city.

Wherein we return to the subject under discussion, and recall the fact that last year we received some very nice Christmas gifts, and some from the wife's people.

Which reminds us of the oil man who went to the depot to see his mother-in-law off on a three month's vacation, and got his hands all blackened patting the engine.

And when **Henry Scanlon** saw a petroleum engineer and his lady shopping in a Los Angeles department store he remarked, "Well, it can't be his wife, or he wouldn't be carrying the parcels."

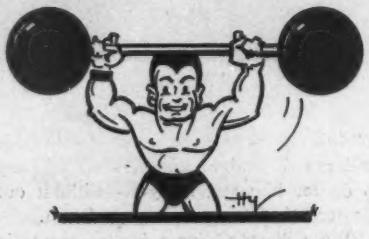
A good Christmas present for a wife, incidentally, would be a safety razor, so that she wouldn't use yours to sharpen her pencils.

Of course another way to cure that practice is to use her powder puff to shine your shoes.

All of which concludes another distinctly educational seance. Remember, Christmas comes but once a year is plenty.

And with these few remarks, we again take great pleasure in wishing our readers a wet and merry Christmas, and a moist and happy New Year.

STRENGTH



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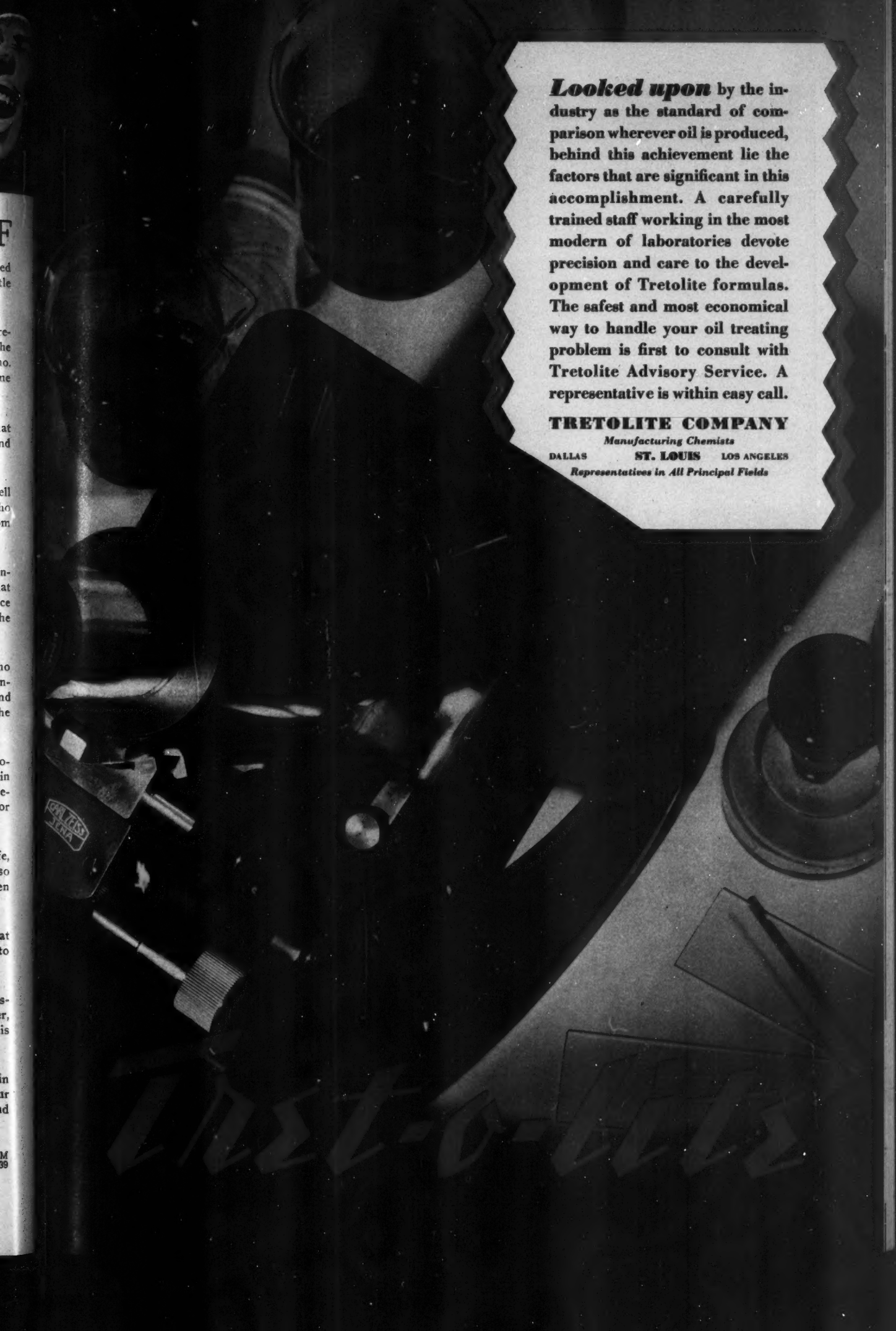

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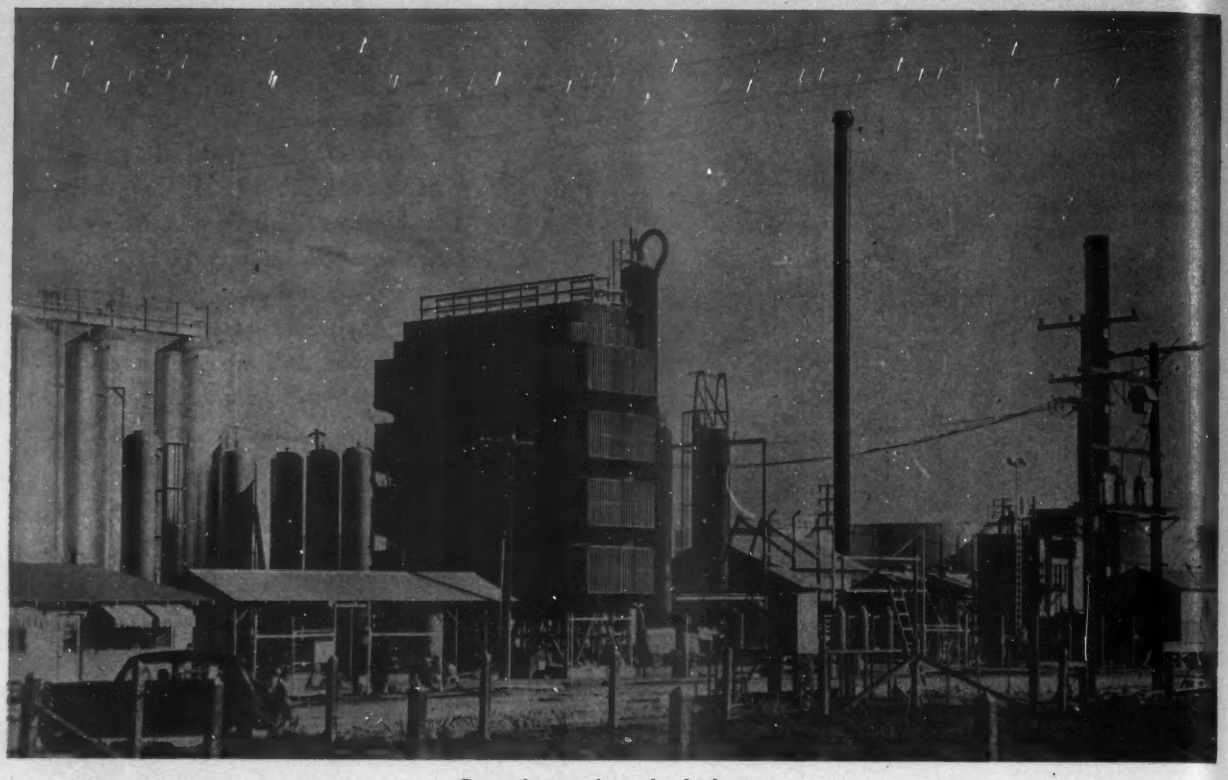

General view from the highway.

(Continued from Page 26)

search work on cracking and low temperature distillation of coal and shale.

Became associated with Bert Devere in 1929 when in charge of the construction and operation of the refinery of the El Camino Oil Co., at Santa Fe Springs.

George Ehrhart: Took a B. S. in Mechanical Engineering at University of Southern California in 1933. Employed by the Shell Oil Co. for four and one half years as a refinery engineer.

This experience included both design and operation of numerous types of refinery equipment at two refineries. Employed for almost a year as an engineer by the Bechtel-McCone-Parsons Corp. This work involved both process and mechanical design work on absorption, stabilizing, cracking, and treating plants. Thereafter, employed by the Pathfinder Petroleum Co.

Glenn Coiner: After leaving school, Glenn Coiner became associated with the oil business through a major supply company in the construction department. He then entered the operations department of a large Mid-Continent oil company in Texas.

He came to California in October 1937, and was with an independent refiner for a period of two years. Since this time he has been connected with Pathfinder.

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San Joaquin Valley

Shell Outpost Cores Gray Sand

Shell Oil Co.'s Mountain View outpost, Voorhees No. 3-20 sec. 20,30-28, is coring gray sand at 4945 ft. after placing the top of the barren Hood zone near 4600 ft. The test is being drilled a half mile east of north end Mt. View production.

Superior Oil Co. Pushing Rio Bravo Field Limits

Superior Oil Co. has made location for two additional projects at the northwest tip of the Rio Bravo field Roe No. 1 is located in the northwest quarter of the southwest quarter of sec. 27,28-25, while Rudnick No. 1 is to be drilled in southeast quarter of the southeast quarter of sec. 28,28-25.

Superior has two strings running in section 27 as offsets to its own production and that of Union Oil Co. whose Kernco lease is immediately south of Superior's. Fink No. 2, located near the south quarter corner, was last reported below 10,-560 ft., while Burner No. 2, one location northwest, is drilling at 9000 ft.

Union Oil Co.'s offset drillers, Kernco No.'s 21-34 and 52-34, are each below 9500 ft. on the way to the Rio Bravo sand which is expected around 11,200 ft.

Standard Completes Greeley Extension

Standard Oil Co. has completed KCL No. 12-5 flowing 3424 barrel daily rate, 38 gravity oil, from the Vedder zone which was discovered to be highly productive in this area by General Petroleum Corp.'s Sullivan No. 1. Located in sec. 7,29-26, the well, long idle at 5959 ft., resumed drilling when the Sullivan No. 1 encountered showings and was completed higher on structure than the discovery well. The flow is coming from bottom at 11,510 ft. through a 31/64 in. bean accompanied by 3,323,000 cubic feet of gas. Standard has spudded KCL No. 12-7 on the same section and has also announced location for No. 12-8.

General Petroleum Corp. is drilling Farrand No. 1, below 7600 ft., one location northwest of the Sullivan project and is preparing to drill Oughten No. 1, both in sec. 12,29-25. Superior Oil Co. will drill Scofield No. 1 just to the north near the east quarter corner of sec. 12, 29-25.

At the most northerly edge of the main body of the field, and correlating with the recent northwest discoveries, Standard Oil Co. completed KCL No. 11-20 flowing an estimated 2400 barrels daily

SAN JOAQUIN VALLEY WILDCATS

Area	Well	No.	Section	Depth	Status
Coalinga	Coalinga Pacific Oil Co., P.S.A.	7	6, 21-15		Location
	Lewis, C. H.	1	18, 21-15	562	Drilling
	Rylatt, Harry E., Kipling	3	26, 20-14	2010	Idle
	Wilshire Annex Oil Co.	64-30B	30, 19-16	8383	Suspended
Gatos Creek	Gatos Creek Oil Co.	1	19, 19-13	466	Idle
Mendota	Jergins Oil Co., Cheney Ranch	1	29, 14-13	3510	Drilling
	Kern County				
Antelope	Par Petroleum Co.	1	32, 25-17	3032	Idle
Buena Vista	Gen. Pet. Corp., B.V.A.	1	1, 32-24	10614	Fishing
	Richfield Oil Corp., B.V.A.	81-36	36, 31-25	10750	Fishing
	Shell Oil Co., B.V.A.	45-9	9, 32-25	9886	Redrilling
Buttonwillow	Union Oil Co., Bowerbank	4-23	23, 29-24	11792	Drilling
Devil's Den	Herzog, Raymond D.	1	27, 25-18	710	Idle
Edison	El Tejon Oil & Ref. Corp., Douglas	1	32, 29-29	4100	Completed
	Mayes, A. S.	1	5, 30-29	4222	Rigging
	O'Rielly, Francis, Edison-Land	2	5, 30-29	4103	Plugging
Kern Front	Davis Petroleum Co.	1	13, 28-27	1042	Drilling
Kern River	Sleeper Ridge Oil Co.	1	15, 29-28	1797	Idle
McKittrick	Burt & Taylor, Taylor	1	30, 30-22	1047	Idle
	Calstan Pet. Co., Webber	1	34, 30-22	1000	Drilling
	Fairfield, F. E., Williams	2	2, 30-21	1530	Idle
Panorama Hills	Burrhus, V. E.	2	31, 31-22		Grade
San Emigdio	Continental Oil Co. KCL	F-1	5, 10-21	10545	Abandoned
	Shell Oil Co. KCL	2A 52-13	13, 11-22	12530	Drilling
Shafter	Continental Oil Co., Comm.	1	12, 28-24		Location
Shale Hills	Gamble & Oliver, Abbott	1	7, 27-19	1210	Idle
	The Texas Co., McD-Theta	1	12, 28-19		Rig
Strand	Continental Oil Co. KCL	D-2	14, 30-36	14051	Abandoned
Ten Section	Richfield Oil Corp., James-Slough KCL	1	6, 31-26	6633	Drilling
	Kings County				
Reef Ridge	Chuka Oil Co.	2A	10, 23-16	185	Drilling
W. Tulare Lake	Shell Oil Co., Cohn Estate	6-4	4, 22-19		Rigging up
Strattford	P. W. Burnham & Assoc., Bartells	1	23, 20-20		Rig
Trico	Pacific Oil & Gas Dev. Co.	1	7, 25-24		Location
	Tulare County				
Trico	Standard Oil Co., Bryson	1	28, 24-23		Location
	Trico Oil & Gas Co., Tulare Farms	2	27, 24-23	2470	Completed

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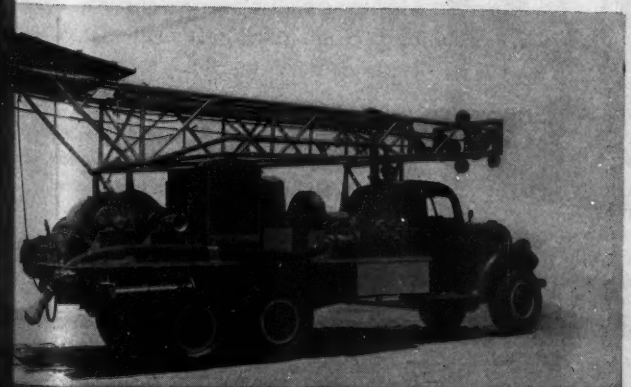

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of 35 gravity oil through a 24/64 in. bean with 2,100,000 cu. ft. of gas. Bottomed at 11,510 ft., the well appears to tie its location in sec. 18,29-26 to approximately the same contour level as the Company's recently completed No. 12-5. One location southeast of No. 11-20, Standard is coring No. 11-21 in oil sand at 11,410 ft. after topping the Rio Bravo zone near 11,375 ft.

Near the north quarter corner of sec. 18,29-26, Standard is rigging up KCL No. 11-23 in an effort to prove up the acreage lying between its new production in the extension and the north flank of the main body of the Greeley Field.

Standard recently extended the south limits of the field with completion of Ross No. 1. Located in sec. 20,29-26, the well which was proved barren in the Greeley zone, was deepened to the Vedder and finished from 11,524 ft. flowing 35 gravity oil at a 300 barrel rate through a 13/64 in. bean with 1,500,000 cubic feet of gas.

Dick and Dore Dig Postholes

Dick and Dore Oil Co. is working on two shallow holes in sec. 34,28-28. Located in the southwest quarter of the section, the projects are expected to be completed around the 650 ft. level from which the company already has 12 such holes pumping. Average yield of each is 5 barrels daily of 14 gravity oil.

Helm and Smith, operating in the same quarter, is finishing its seventeenth job in approximately the same zone for substantially the same yield. Located in the old Kern River field, the wells are but a few of the myriads of shallow holes punched in this old and shallow east Valley field.

Oxford Plans Midway Well

Oxford Oil Co. has announced location for well No. 7 in the Midway-Sunset Field. Located in the northeast quarter of sec. 27,31-22, the well is near the site of the recently finished No. 6 which was completed on the beam for an initial 175 barrels from 2056 ft. The good yield was accounted for by the use of gravel pre-packed liner, which not only precludes sanding up but eliminates sand cut pumps and resultant servicing costs.

Union Oil Starts Kettleman Driller

Union Oil Co, holder of one of the few small parcels of independently operated acreage in the Kettleman North Dome, has started work on Ameranda-King No. 9. Located near the center of the southwest quarter of sec. 29,21-17, the well will go below the 10,000 ft. level where good production is being found in the McAdams sand.

In the northeast quarter of the section, Superior Oil Co.'s Huffman No. 4 is drilling in oil sand at 10,440 ft. after topping the Eocene sand near the 10,300 ft. level.

Kettleman North Dome Assoc., a group of leaseholders welded into an operating company and participating in profits in ratio to acreage, is running seven strings in the field.

Standard Oil Co., owner in fee of alternate sections throughout the structure, is operating fifteen drilling rigs, with No.'s 28-19J and 72-19J each drilling below 10,600 ft.

El Tejon O. & R. Test Completed

After finding the bottom sands wet in its 4100 ft. Edison area outpost, El Tejon Oil and Refining Co. plugged and completed Douglas No. 1. Situated near the south quarter corner of the southwest quarter of sec. 32,29-29, the well is pumping from 3944 ft. an estimated 150 barrels per day 17 gravity oil, cutting 4.0% sand. Reconsideration of abandonment proceedings and a subsequent final test higher in the hole was fortunate indeed, since production at this rate from shallow depths has ever been profitable.

Francis O'Reilly's Edison Land Co. No. 2, located in sec. 5,30-29 across the section line from the El Tejon test, has plugged to 4069 ft. for a test of higher zones. Originally tested from bottom at 4103 ft. the well pumped water with a trace of oil.

Calstan Petroleum Drills in Tar Sand

Calstan Petroleum Co., lone operator in the McKittrick area, is drilling Webber No. 1 in tar sand at 1005 ft. The well, located in sec. 34,30-22 southeast of McKittrick production, topped the zone near 880 ft.

Until recently active, F. E. Fairfield's Williams No. 1 located in sec. 2,30-21, is idle at 1530 ft. Taylor No. 1, a project by A. G. Burt and W. J. Taylor, in sec. 30,30-22, is also idle at 1047 ft.

Shell Runs Pipe In B. V. Lake Try

At the south edge of Buena Vista Lake, Shell Oil Co. ran a 9⅝ in. protective string in B.V.A. No. 45-9. The hole, located in sec. 9,32-25, was drilled to 9886 ft. where the hole was lost due to caving formations. Redrilled to 8000 ft., where the pipe is standing cemented,

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the project apparently represents the only lake driller to have much chance at Stevens Zone production.

The Shell well affords a better shot at the productive zone than either of two other wells drilling near the lake since Chert, which overlays the Stevens zone, was encountered much higher than in the other tests. General Petroleum Corp.'s B.V.A. No. 1, first test in the area and located at the base of Elk Hills in sec. 1,32-24, is fishing drill pipe from 3436 ft. Drilled to a bottom of 10,614 ft., the well picked up sands believed to be barren Stevens near the 10,560 ft. mark.

At the north tip of the Buena Vista Lake Gas field, Richfield Oil Corp.'s B.V.A. No. 81-36 is bottomed at 10,750 ft. after locating the barren Stevens near 10,300 ft. This well, drilled in sec. 36, 31-25 near established gas production, tested the Olcese gas sands on its way down. A formation test produced 12,500,000 cu. ft. of gas.

Stuck Drill Pipe Causes Abandonment

Continental Oil Co.'s KCL No. F-1 was abandoned after failing to loosen drill pipe stuck near bottom. Located in sec. 14,30-26 on the San Emigdio plains, the well had been drilled to 10,545 ft. when the drill stuck in hard shale. Slight oil showings were encountered in the approximate interval 8700 to 8800 ft., a formation test of which yielded only gas cut mud.

Shell Oil Co. is drilling below 12,530 ft. in the San Emigdio plains in KCL No. 2A-52-13. Located in sec. 13,11-22, the hole has one of the world's longest protective strings cemented at 10,297 ft. Sole showings have been streaks of sand showing light cuts near 12,300 ft. which at first gave rise to the story that a new field had been found. Continued drilling however, produced but little encouragement.

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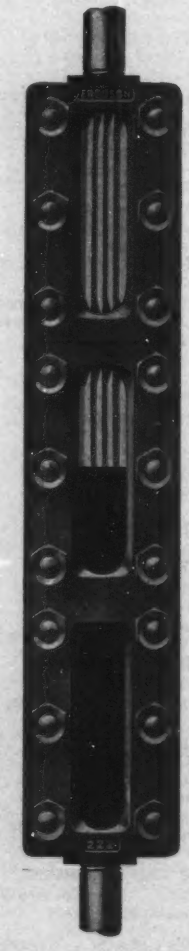

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Davis Drills Kern Front Try

Davis Petroleum Co. is drilling well No. 1 in the Kern Front area. Located in sec. 13,28-27 as an easterly Kern Front outpost, the well was last reported at 1000 ft.

Buttonwillow Test Cores Fair Oil Sand

Union Oil Co. cored fair looking oil sand from 11,650 to 11,750 ft. in its Buttonwillow wildcat, Bowerbank No. 4-23. Located in sec. 23,29-24, the well is attempting to find better oil sands than those tested in California Exploration Co.'s 12,989 ft. hole which was abandoned four miles northwest of the current try.

Showings in the hole have to date correlated closely with those found in the deep dry hole, inasmuch as they have appeared to be very tight and afford very little reservoir for oil accumulation.

C. H. Lewis Drilling Coalinga Shallow Try

C. H. Lewis, drilling well No. 1 a mile and a half south of Coalinga West Side production, is below 560 ft. in his test of the little drilled area. Located near the west quarter corner of sec. 18,21-15, the well is the only active project in the west Coalinga district.

Vedder Abandons Mount Poso Test

Vedder Petroleum Corp. has drilled and abandoned Lambert No. 31-1 in the Mt. Poso area. The test, located in the northeast quarter of sec. 31,26-28, was bottomed in gray sand at 1948 ft. after finding the barren Vedder at 1908 ft. Only four days were required from spudding to abandonment.

ELECTRICITY AT WORK IN THE OIL FIELDS

At Christmas, and during every day in the year for many long years, electric motors give their owners six cheer-bringing features—fifty per cent lower cost; a substantial salvage value even after long continuous service; maximum daily efficiency; increased production (often as much as fifteen per cent); dependable, trouble-free operation; and over-all operating economy superior to all other prime movers.

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Wilshire Oil Company electric pumping installation located at Huntington Beach. Oil Country Specialties Unit. 25 horsepower, U. S. motor.

SOUTHERN CALIFORNIA EDISON COMPANY LTD.

12-39

Los Angeles Basin

Barnsdall Recements Rosecrans Outpost

After finding the water not shut off in Santa Fe Corp. No. 1 at south Rosecrans, Barnsdall Oil Co. recemented the 7 in. casing shoe on bottom at 8790 ft. and squeezed perforations at a higher level before attempting a completion. Located east of San Pedro St., the well will extend the new production discovered by Barnsdall & Wilshire several hundred yards to the east.

South of the original extension area, Dr. Geo. G. Averill is swabbing his No. 3, finished at 8405 ft. with formations open below 8080 ft. Like its neighbors, the well seems to be a slow starter, but by the time this is read it should be flowing.

Royalty Service Corp. is said to be planning to drill the Riverside Portland Cement property east of the Apex Petroleum Co. project now below 3750 ft. on the Hatfield property.

In the discovery area, Southern California Petroleum Corp.'s Rowena No. 1 is below 4000 ft. and Tom Kelly's McMillan has passed the 7000 ft. marker.

Barnsdall & Wilshire will next drill Winnard-Crandall No. 1 located north of Redondo Beach Blvd. and west of Avalon.

Continental To Start San Fernando Wildcat

Finally surmounting all legal difficulties arising from a royalty dispute, Continental Oil Co. is preparing to drill its long projected Howell No. 1 two miles southeast of Aliso Canyon. The site of the new wildcat is almost within a stone's throw of Standard Oil Co.'s Mission One No. 2A which sought San Fernando production in the early 1920s. Good oil showings were rumored but no oil was actually produced and the test was abandoned at 4003 ft.

Surveyed coordinates of the new location are 11,679 ft. south and 8644 ft. east of the southwest corner of sec. 22, 3-16 which places the well in sec. 2,2-16. Ground elevation is given as 1480 ft.

Costa Mesa Well May Set Casing

Though idle for several weeks, Milton N. Thompson's Costa Mesa wildcat is said now to be planning to set casing to test tar showings encountered from 1700 to 1740 ft. Located a mile or so north of the old tar pumpers, the well is now bottomed in brown shale at 1800 ft.

Attempts to produce the heavy oils of this area have been 100% failures in the past but it is possible that with recently developed gravel packed liners and tubing installed heaters the tarry stuff may be economically brought to the surface.

Deep Test Dry At Wilmington

Finding nothing capable of production below the known sands of the Ford Zone, Royalty Service Corp. drilled Nelson No. B-7 to 6901 ft., and encountered the schist at 6885 ft. Discovery of barren basement between the field's previous deep tests drilled by General Petroleum Corp. on the Terminal lease and Tide Water Associated Oil Co. on Banning property north of State St., practically dispels hope for El Segundo type production in any portion of the field. Located in the area south and west of the intersection of Anaheim and Ford Blvds., the well has 7 in. casing cemented at 5750 ft. for completion in the Ford Zone.

In the northwest section, Brookline Oil Co. completed Donnie Comm. No. 1 at the intersection of Marine and "L" streets flowing 335 bbls. a day of 16 gravity oil cutting 5.0%. Formation is open at intervals from 3110 ft. to bottom at 3698 ft.

Two wells were finished in the northern area of Long Beach harbor. At the northeast corner of Wilmington Blvd. and Jackson St., Dumm Bros. Petroleum Co. brought in No. 4 at a 250 bbl. rate flowing through a ½ in. bottom hole bean. Open to production was 342 ft. of the Ranger zone. A block north of Anaheim Blvd. and 300 ft. west of Hayes, Los Angeles Basin Drilling Co.

LOS ANGELES BASIN WILDCATS

Area	Well	No.	Section	Depth	Status
Athens	Melrose Pet. Co.	1	12, 3-14		Rig
Castaic	Worland, C. C., Jenkins-Owens	1	18, 5-16		Grading roads
Chatsworth	Continental Oil Co., Howell	1	2, 2-16		Location
	Fernando Oils, Ltd., Holmes	1	18, 2-16		Grade
Dominguez	R. E. Havenstrite, Operator	1	32, 3-13	7543	Plug. 7500—completed
Inglewood	Vanguard Oil Co., L.A.I.	1	29, 2-14		Rig
Mint Canyon	Redwood Oil Co., Mitchell	2	22, 4-15	525	Idle
Newhall	Mangrum and Page, Lintz	1	4, 3-15	828	Idle
	Consolidated Pet. Co., Needham	4	13, 3-16	4026	Drilling
	Tamas Oil Co., Perkins	1	11, 3-16	3275	Drilling
Palos Verdes	Rolling Hills Pet.	1	27, 4-14	6550	Testing
Potrero Heights	Owen O Oil Co.	1	36, 1-12		Cellar
Puente	Kelso, F. W., Kelso	1	13, 2-10	2380	Idle
	Stabeck & Assoc.	1	14, 2-10		Rig
Sunland	Casa Grande Oil Co.,Lopez-Lundy	1	1, 2-15	2218	Idle
West Whittier	West Whittier Oil Co., Pellissier	1	17, 2-11	505	Drilling
Whittier	C. W. Partridge, Hillside	1	22, 2-11	1780	Idle
	Orange County				
Costa Mesa	Thompson, Milton N. Banning	1	9, 6-10	1801	Idle
Santa Ana	Gen. Pet. Corp., Was	1	21, 5-10	330	Drilling
Yorba Linda	Morgan, George Fricke	1	21, 3-9	1291	Drilling
	San Bernardino				
Carbon Canyon	Carbon Canyon Oil Co.	1	30, 2-8	256	Idle
	Hokom, John, Oil & Gas Co., Ltd., Hokom	1	31, 2-8	2941	Idle
	San Diego County				
Imperial Valley	Sheran, John F.	1	3, 12s-8e		Location
	Imperial County				
Imperial Valley	Venice O. & R. Co.	1	1, 11s-13e		Location

NORTHERN COUNTIES WILDCATS

County	Well	No.	Section	Depth	Status
Contra Costa	Tassajara Oil Corp.	1	9, 2s-1e	5227	Drilling
Monterey	Loma Grande Oil Co., Corey	1	23, 24s-10e		Location
	Priest Valley Pet. Co., Greve	1	22, 20s-12e	1820	Drilling
Sacramento	Superior Oil Co., Larsen	1	17, 3n-3e		Location
San Benito	Consolidated Pet. Co.	1	11, 17s-11e	2120	Idle
Solano	Richfield Oil Corp., Potrero Hills	2	5, 4n-1w		Rigging up
Sutter	Buttes Oilfields, Inc., McPherrin	6	1, 15n-1e	6471	Drilling

obtained 150 bbls. of clean oil in Kupfer No. 3.

Several wells each were completed by the field's largest operators, Union Pacific Railroad and Long Beach Oil Development Co.

Union Oil Gets Richfield Pumper

Union Oil Co. redrilled Chapman No. 24, west end Richfield well, to 4852 ft. and recompleted pumping 25 bbls. a day cutting 85.0%.

A short test of Desert Glow Oil Co.'s Devon Shore No. 5 produced a small quantity of 45 gravity oil according to unverified reports. Bottom of the hole is 6062 ft.

West Whittier Oil Drills Pellissier 1

One of the most closely watched wildcats in the Los Angeles Basin is Pellissier No. 1 being drilled by West Whittier Oil Co. at the west end of the Whittier Hills in sec. 17,2-11. Scheduled to test oil sands encountered in other wells in the vicinity, the well is reported to be drilling below 1580 ft.

Dominguez Extended West of Avalon Blvd.

Within a few hours of the time that Union Oil Co. brought in Callendar No. 73 flowing 1014 bbls. a day at the east side of Avalon Blvd., Russell Havenstrite completed the field's westerly outpost across the street flowing approximately the same rate. The two are the latest of a series of wells which have carried Seventh and Eighth Callendar zone production nearly a mile to the west in little more than a year.

That the new extension should be long lived is seen in the thickness of the productive formations, the Havenstrite well topping the Seventh Callendar at 6940 ft. with streaks of good oil sand continuing through the Eighth to 7525 ft. Drilled to 7543 ft., the hole was plugged to 7500 ft. to shut off gray sand found on bottom. Casing was cemented at 6974 ft. and the well was completed flowing through tubing after landing a perforated liner on the plug.

Union Oil Co.'s offset, Callendar No. 73, bottomed at 7460 ft., cemented 7 in. casing at 6980 ft. and completed flowing 31.6 gravity oil through a 44/64 in. bean. Gas production was 530,000 cu. ft. per day.

Northeast of the two outpost wells, Union Oil Co. finished Callendar No. 74 at the plugged depth of 7117 ft. flowing 200 bbls. daily on gas lift. The well utilizes 240 ft. of formation below the shoe of the water string.

Shell Oil Co. plugged Reyes No. 36, highest well in the field, to 3150 ft. and recompleted flowing 5,000,000 cu. ft. of gas. Reyes No. 100, another structurally high well, is reported in oil sand at 8000 ft.

Union Oil Co. is preparing to drill Carson No. 13 in the southwesterly section.

Rolling Hills Co. Testing Wildcat

Rolling Hills Petroleum Co. is preparing to make a production test in its wildcat well located at the north end of the Palos Verdes uplift. Bottomed at 6573 ft., the project is cased with 4¼ in. pipe to 6450 ft. below which it is claimed a good conglomerate oil zone was found.

New Companies To Drill Basin

A number of new companies have been formed recently to drill in the Los Angeles Basin, the majority of which will operate either at Wilmington or Montebello. Scheduled to seek production in the former area are Gibraltar Oil Co., headed by Tom Jennings who is newly arrived from Mid-Continent fields; Hamaron Oil Co.; Wonder Oil Co., of which George Hill is President and C & R Oil Co. which was organized by Melville J. Courson. John Barth, who has intermittantly drilled a wildcat in Imperial Valley, is a newcomer to Wilmington, having acquired Properties No. 1 from Oceanic Oil Co.

Late entries at Montebello include Williamette Oil Co., backed by former Oregon capital; Franru Oil Co., a Hubert Allen enterprise and Junior Oil Corporation, formed by Tom Simmons, Jr. Chemical Oil Company, under the direction of Lauren S. Fish, will drill the Chemiculture property on Poplar St. at the east end of the field.

Treadwell Corporation, a new concern with offices at 2698 Dawson Ave., Long Beach, has taken over and is reconditioning the former Rafair Drilling, Inc. No. 1 on Signal Hill.

John F. Sheran of Western Auto Supply Co. is attempting to break into the oil business with a wildcat well in Imperial Valley. Location of the project is in sec. 3,12-8, about 50 miles northwest of Brawley. Venice Oil & Refining Co., inactive for some time, is becoming an operating concern again with the drilling of a carbon dioxide well east of Salton Sea.

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Santa Ana Wildcat Attracts Attention

Attracting the attention of oil men from all over the state, Contractors Bell & Loffland are now drilling the important wildcat well southeast of Santa Ana in sec. 21,5-10. Known as Frank J. Was No.1 of the General Petroleum Corp., the well is reported drilling at 2000 ft.

Montebello Completions Average One Well Per Day

With approximatcly 50 wells completed since the first of November, Montebello has added new producers at the average rate of one a day. Drilling activity is, however, definitely on the down grade despite the development of the south and west edges of the Eighth zone. Indicative of the decline is the count of 31 drillers in our first December issue against 25 at this writing. Six new projects have been started but not yet spudded. Permits for many more have been taken out at the Montebello city hall, but probably a high percentage of these will fall by the wayside.

Although the greater portion of new activity is in the westerly section of the field, Chemical Oil Co. is planning immediate development of the Chemiculture property north and west of the intersection of Beverly and Poplar. McKeon Corp. has derrick up for an offset, Travis No. 2. Preparing to drill the Lingenfelter lease north of Chemiculture is Williamette Oil Co. formed by Warren Meeker, Sam Brooks and J. E. Roman, the latter of Portland, Ore.

Active at the west end are The Caminol Co. which is rigging up No. 4-20 after completing No. 3-17 at the corner of Wilcox and Beverly; Pacific Western Oil Co., drilling its first in the field at the southwest edge of production; The Texas Co. with two strings running on Wilcox property and Hathaway Oil Co., now drilling Dore No. 3. Dutch Petroleum Co. is completing Schelnick No. 1 between two Beverly Blvd. producers, Ring Oil Co.'s Paden No. 1 and Montebello Oil Co.'s No. 1.

Among the companies to recently enter the southwest sector are Junior Oil Corp., headed by Tom Simmons, Jr., Gus Pongratz Oil Co., and Stag Oil Co. who will drill adjacent leases east of Pacific Western's well.

At the end of exactly two years of deep zone development, the west end of Montebello is yet without a dry hole. Each main zone below the old Fourth has been bigger and better than the one above it, the Fifth being relatively small in areal extent while the Seventh-Eighth zones have yielded prolifically in one of the most intensive of 7500 ft. drilling booms. Since the discovery of the Eighth zone by Union Oil Co.'s La Merced No. 30 in April of this year, 125 wells have been completed, the majority with production enough to be profitable, contrary to the predictions of some who foretold another fiasco such as the last Torrance campaign where it is said only one well in ten will pay out.

Though still unproved, geologists and engineers alike generally concede the presence of a Ninth zone which should be productive approximately within the limits established by the Eighth. Drilling for the deeper horizon has been discouraged, but with the Eighth zone development complete except along the edges it is probable that a test will be made in the near future.

Moody Gulch Well Pumps 40 Bbl. Rate

Pumping at the initial rate of 40 bbls. a day, Homer Hatcher of Huntington Beach completed his No. 2 well at Moody Gulch in Santa Clara County.

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Coastal District

Shell Barrett No. 1 Is "No Dope" Wildcat

Shell Oil Co.'s Barrett No. 1, test of the San Marcos area in sec. 13,6-30, is perhaps the most air tight "no dope" wildcat on the coast. Indicating the seriousness with which Shell regards this well, much ado was recently occasioned when a scout of another major company was denied access to the property.

No secret is made of the depth, however, that being reported by the Shell Oil Co. as 1760 ft. Formations, of course, are withheld.

The Texas Co. Spuds Shiells Canyon Well

Continuing its development program in the Shiells Canyon field, The Texas Co. is drilling Shiells No. 138 below 1500 ft. The company has been successful in obtaining very good producers in this old producing area.

M'diviani 5 Spud Delayed by Trip

Spudding of M'diviani No. 5 at Santa Barbara Mesa has been delayed until after the first of the year because David M'diviani, president of Trans-Oceanic Oil Co., has been called east on other business. The new well, which is the most southerly of the five in line, is located on the bluff above the ocean. One of the most picturesque fields in the world, Santa Barbara Mesa is superbly located overlooking the sea and the Santa Barbara Islands, and though production is not sensational, it is well worth the while of anyone to inspect an oil field in so gorgeous a setting.

Navy Completes Santa Maria Well

Navy Oil Co., a newcomer to the Santa Maria Valley field, completed its first well in the O'Donnell Subdivision flowing at an estimated initial rate of 4250 bbls. per day. Located in lot 28, the hole was bottomed at 5698 ft. after topping the Monterey dark brown shale at 5373 ft. and the Chert at 5560 ft.

In the same area, Union Oil Co. is drilling O'Donnell No. 2-5 below 2775 ft.

Continental to Finish Two San Miguelito Wells

Continental Oil Co. has two wells in the San Miguelito field approaching completion. Grubb No. 13 is reported setting a water string near the 5400 ft. level while No. 14, with bottom at 8090 ft. has 7 in. casing cemented at 6311 ft.

Goleta Gas Well Cores Vaqueros

Coring hard gray shale at 4200 ft., General Petroleum Corp.'s More No. 5 in the Goleta gas field is now believed to be in Vaqueros formations. Located in sec. 22,4-28, the well seeks oil production in a field which now yields gas.

An annual application of petroleum jelly will keep leather book bindings in perfect condition.

COASTAL COUNTIES WILDCATS

Santa Barbara County

Area	Well	No.	Section	Depth	Status
Carpinteria	Sunset Oil Co.	1	32, 4-25	3413	Idle
Cuyama	Hearte, O. K.	1	11, 9-25	2695	Drilling
Goleta	Gen. Pet. Corp., More	5	22, 4-28	4168	Drilling
Lompoc	Sun-Bell Drilling Co.	1	28, 8-34	2982	Idle
Los Olivos	United Western Oil Co.	1	15, 7-30	3935	Cleaning out
San Marcos	Shell Oil Co., Barrett	1	13, 6-30	1732	Drilling
	San Luis Obispo County				
Elk Horn	Calif. Pet. Prod., Irons	1	19, 10-24	2515	Drilling
	Newton, S. M., Stafford	1	18, 31-21	5125	Idle
	Newton, S. M., Well	1	3, 32-21		Grade
	Burrhus, V. E.	1	8, 32-22	60	Idle
	Burrhus, V. E.	3	27, 32-22		Grade
Midway	Lee, H. E., Stewart	1	7, 32-22	2210	Idle
Paso Robles	Epco, Inc.	1	27, 26-13	6157	Idle
	Ventura County				
Conejo	Sulphur Springs Oil Co., Janss	1	33, 2-19		Rig
Moorpark	Shaffer, Frank, et. al.	1	30, 3-19	625	Drilling Portable
Ojai	Argo & Rynning, M & A	1	7, 4-21		Location
	Coronet Oil Co., Coronet	4	17, 4-21	875	Drilling
Santa Susana	K. C. Oil Co., Marr	1	32, 3-17	1014	Idle
Sespe	Nevada-Fortuna Oil Co.	1	13, 4-19		Rig
	G. E. Development Co.	7	13, 4-19	225	Drilling
	Renard Oil Co.	1	6, 4-19	1075	Drilling
Shiells Canyon	Galveston Oil Co.	1	5, 3-19	3140	Idle
South Mountain	Albatross Oil Co., Schiefferle	1	17, 3-20		Rig
	Rilling, Harry	1	13, 3-21	3127	Producing

GREETINGS

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New C.N.G.A. Charcoal Test Shrinkage Factors

Effective Jan. 1, 1940 a new table of shrinkage factors for the Charcoal Test described in C.N.G.A. Bulletin TS-351 will go into effect. This table of factors, reproduced in full by the California Oil World on the opposite page, replaces Table II in all copies of the Charcoal Test Bulletin now in use.

By referring to the table it will be noted that the top scale contains the volumes of rectified condensate, while the vertical scale contains the volumes of condensate obtained at 30 pounds. A comparison of the respective volumes for any test gives the shrinkage in gas volume when the gas under test was passed through the charcoal tube. For example: If 26.5 milliliters of condensate was recovered at 30 pounds, and, after rectification 22.5 milliliters remained, the shrinkage value to be added to the amount of gas passed through the tube would be 0.22 cubic foot.

This new table replaces the old table where the cubic feet of gas discharged from charcoal tube was compared to the chloropicrin activity of the charcoal to obtain the shrinkage, and is based on extensive work by the C.N.G.A. Charcoal Test Committee whereby the vapor equivalents for 30-lb gauge 33°F. and rectified condensate volumes have been experimentally determined in different fields for a wide variety of lean and rich gases. To these have been added the respective venting losses incidental to distillation to obtain the total shrinkage value, and the latter value compared to various ratios of rectified condensate volumes to 30-lb. condensate volumes.

Extra copies of the new shrinkage table, together with revised pages 13, 39, 40 and 47 for insertion into Bulletin TS-351 may be obtained gratis from George Tyler, C.N.G.A. Secretary, Associated Realty Building, Los Angeles, Calif.

Columbia Steel Co. Promotes Executives

Promotion of three executives of Columbia Steel Co., subsidiary of United States Steel Corp., has been announced by William A. Ross, president.

They were J. R. Gregory, elected vice president and general manager of sales, F. B. DeLong, vice president in charge of sales, Los Angeles District and the appointment of C. S. Conrad as assistant general manager of Sales, Manufacturing and Construction accounts. The announcement was made following a board of directors meeting of Columbia Steel Co.

Mr. Gregory is a native of Chicago, Ill., and has been associated with the steel industry since 1911 when he joined the Illinois Steel Warehouse Co. as salesman. In 1919 he went in business for himself and joined the firm of Cowin & Co. as a partner. In 1924 he became affiliated with the Steel Service Co. for a period of two years, joining United States Steel Products Co. in 1926. When the old Columbia Steel Corp. was purchased by United States Steel Corp. and merged with the Pacific Coast Department of United States Steel Products Co., Mr. Gregory joined the new firm as assistant general manager of sales.

Mr. DeLong was born in Sparta, Wis., and in 1909 started work as a topographer for the United States Geological Survey. In 1910 he joined the Portland office of the Crane Co. as salesman. In 1917 he transferred his affiliations to Porter Brothers of Detroit, serving as superintendent of works. In 1918 Mr. DeLong became associated with Walworth Co., New York, in the capacity of manager. In succession he joined the Peerless Co. of Seattle, Wash. in 1925 and the Grinnell Co., of Los Angeles in 1929. In 1938 he joined the Los Angeles District Sales Office of Columbia Steel Co., as manager of the Tubular, Alloy and Stainless Department. A few months later he was appointed district manager of sales of Los Angeles.

Mr. Conrad who is appointed to succeed Mr. Gregory as assistant general manager of Sales, Manufacturing and Construction Accounts, was born in DeKalb, Ill. He started work with the Fairbanks Morse Co. at Beloit, Wisc. For a period he served with the United States Government in the Department of Interior and then became affiliated with the automobile industry. In 1930 he became affiliated with National Tube Co., subsidiary of United States Steel Corp. and in 1932 was transferred to the sales department of Columbia Steel Co. where he was shortly promoted to the position of San Francisco district manager of Sales.

Activities Committee For Tulsa Oil Show

Committee personnel to handle advance plans for meetings and entertainment for members of the various divisions of the oil industry is being appointed, according to W. G. Skelly, president of the May 18-25, International Petroleum Exposition.

Special days will be designated for each group, and committees will be set up for oil industry members including fields of exploration, production, pipe-line, refining, natural gasoline, drilling contractors, safety, purchasing agents, marketing, oil-timers, international delegates, young oil executives, and petroleum engineering students.

With seven foreign nations already having notified the Exposition that they will send delegations, Mr. Skelly points out that unusual international interest is being manifest this year. Greece, Turkey, Canada, Germany, Venezuela, Mexico, and Italy have sent in their advance notifications.

Because of the increased international groups which are expected, the international delegates committee has been divided into three groups. James H. Gardner, president of the Gardner Petroleum Co., Tulsa, will head the work of the local committee; Barton A. Myers, director of the International Petroleum Co., Ltd., Toronto, Canada, will be chairman of the foreign attendance committee; and the Nomads club, made up of oil field supply house representatives who travel extensively in foreign countries, will provide for the entertainment of the international delegates in Tulsa during the week of the exposition.

Included among other committee chairmen who have already been appointed are H. M. Stalcup, vice-president in charge of production, Skelly Oil Co., production committee; H. M. Cosgrove, executive secretary of the Purchasing Agents Association, Tulsa, purchasing agents committee; Emby Kaye, manager, recycling operations, Tide Water Associated Oil Co., Tulsa, refinery committee; H. W. Boggess, superintendent of safety, Sinclair Oil companies, safety activities committee; J. A. LaFortune, vice-president of the Warren Petroleum Co., Tulsa, natural gasoline committee; Dr. Gustav Egloff, director of research, Universal Oil Products Co., Chicago, scientific and technical committee; and R. W. McDowell, vice-president in charge of sales, Mid-Continent Petroleum Corp., Tulsa, marketing committee.

The scientific and technical committee is planning this year to increase the scope of the hall of science exhibits in making them a permanent display, to be left open to the public throughout the year.

Special plans for a dinner for engineers and technical men of the oil industry are being laid by the Engineers' Club of Tulsa, of which F. W. Robson is president.

The exposition housing bureau is already busy compiling a list of comfortable places for visitors to stay while in Tulsa. Earl Sneed, Sneed Oil Co., Tulsa, is chairman of this committee. The hospitality of the city of Tulsa will be extended to these visitors through a special Tulsa chamber of commerce committee headed by Phil W. Bohart, assistant manager, Gypsy Division, Gulf Oil Co., Tulsa.

New C. N. G. A. Charcoal Test Shrinkage Factors

SHRINKAGE IN GAS VOLUME

(CUBIC FEET)

MILLILITERS OF CONDENSATE AT 30 lb. ga. - 33°F.	RANGE	MILLILITERS OF RECTIFIED CONDENSATE AT 100°F.																											MILLILITERS OF CONDENSATE AT 30 lb. ga. - 33°F.
		0.0	2.5	5.0	7.5	10.0	12.5	15.0	17.5	20.0	22.5	25.0	27.5	30.0	32.5	35.0	37.5	40.0	42.5	45.0	47.5	50.0	52.5	55.0	57.5	60.0	62.5	65.0	
		0.0 TO 1.2	1.3 TO 3.7	3.8 TO 6.2	6.3 TO 8.7	8.8 TO 11.2	11.3 TO 13.7	13.8 TO 16.2	16.3 TO 18.7	18.8 TO 21.2	21.3 TO 23.7	23.8 TO 26.2	26.3 TO 28.7	28.8 TO 31.2	31.3 TO 33.7	33.8 TO 36.2	36.3 TO 38.7	38.8 TO 41.2	41.3 TO 43.7	43.8 TO 46.2	46.3 TO 48.7	48.8 TO 51.2	51.3 TO 53.7	53.8 TO 56.2	56.3 TO 58.7	58.8 TO 61.2	61.3 TO 63.7	63.8 TO 66.2		
15.0	14.5-15.4	.21	.19	.18	.16	.15	.13	.11																					15.0
16.0	15.5-16.4	.22	.20	.19	.17	.16	.14	.12																					16.0
17.0	16.5-17.4	.23	.21	.20	.18	.17	.15	.13	.12																				17.0
18.0	17.5-18.4	.23	.22	.21	.19	.18	.17	.15	.13																				18.0
19.0	18.5-19.4	.24	.23	.21	.20	.19	.18	.16	.15	.13																			19.0
20.0	19.5-20.4	.25	.24	.22	.21	.20	.19	.17	.16	.14																			20.0
21.0	20.5-21.4	.26	.25	.23	.22	.21	.20	.19	.17	.16																			21.0
22.0	21.5-22.4	.27	.26	.24	.23	.22	.21	.20	.18	.17	.15																		22.0
23.0	22.5-23.4	.28	.26	.25	.24	.23	.22	.21	.20	.18	.17																		23.0
24.0	23.5-24.4	.28	.27	.26	.25	.24	.23	.22	.21	.20	.18	.17																	24.0
25.0	24.5-25.4	.29	.28	.27	.26	.25	.24	.23	.22	.21	.20	.18																	25.0
26.0	25.5-26.4	.30	.29	.28	.27	.26	.25	.24	.23	.22	.21	.19	.18																26.0
27.0	26.5-27.4	.31	.30	.29	.28	.27	.26	.25	.24	.23	.22	.21	.19																27.0
28.0	27.5-28.4	.32	.31	.30	.29	.28	.27	.26	.25	.24	.23	.22	.20	.19															28.0
29.0	28.5-29.4	.33	.32	.31	.30	.29	.28	.27	.26	.25	.24	.23	.22	.20															29.0
30.0	29.5-30.4	.34	.33	.32	.31	.30	.29	.28	.27	.26	.25	.24	.23	.21															30.0
31.0	30.5-31.4	.35	.34	.33	.32	.31	.30	.29	.28	.27	.26	.25	.24	.23	.21														31.0
32.0	31.5-32.4	.35	.34	.34	.33	.32	.31	.30	.29	.28	.27	.26	.25	.24	.23														32.0
33.0	32.5-33.4	.36	.35	.35	.34	.33	.32	.31	.30	.29	.28	.27	.26	.25	.24	.22													33.0
34.0	33.5-34.4	.37	.36	.35	.35	.34	.33	.32	.31	.30	.29	.28	.27	.26	.25	.24													34.0
35.0	34.5-35.4	.38	.37	.36	.36	.35	.34	.33	.32	.31	.30	.29	.29	.28	.27	.25	.23												35.0
36.0	35.5-36.4	.39	.38	.37	.36	.36	.35	.34	.33	.32	.31	.30	.30	.29	.28	.26	.25												36.0
37.0	36.5-37.4	.40	.39	.38	.37	.37	.36	.35	.34	.33	.32	.31	.31	.30	.29	.28	.26												37.0
38.0	37.5-38.4	.41	.40	.39	.38	.37	.37	.36	.35	.34	.33	.32	.32	.31	.30	.29	.27	.26											38.0
39.0	38.5-39.4	.42	.41	.40	.39	.38	.38	.37	.36	.35	.34	.33	.33	.32	.31	.30	.29	.28											39.0
40.0	39.5-40.4	.42	.42	.41	.40	.39	.39	.38	.37	.36	.35	.34	.34	.33	.32	.31	.30	.29	.28										40.0
41.0	40.5-41.4	.43	.42	.42	.41	.40	.39	.39	.38	.37	.36	.35	.35	.34	.33	.32	.31	.30	.29										41.0
42.0	41.5-42.4	.44	.43	.43	.42	.41	.40	.40	.39	.38	.37	.36	.36	.35	.34	.33	.32	.31	.30										42.0
43.0	42.5-43.4	.45	.44	.44	.43	.42	.41	.41	.40	.39	.38	.37	.37	.36	.35	.34	.33	.32	.31	.29									43.0
44.0	43.5-44.4	.46	.45	.44	.44	.43	.42	.42	.41	.40	.39	.38	.38	.37	.36	.35	.34	.33	.32	.31									44.0
45.0	44.5-45.4	.47	.46	.45	.45	.44	.43	.42	.42	.41	.40	.39	.39	.38	.37	.36	.35	.34	.33	.32	.31								45.0
46.0	45.5-46.4	.48	.47	.46	.45	.45	.44	.43	.43	.42	.41	.40	.40	.39	.38	.37	.36	.35	.34	.33	.32								46.0
47.0	46.5-47.4	.48	.48	.47	.46	.46	.45	.44	.44	.43	.42	.41	.41	.40	.39	.38	.37	.36	.35	.34	.33								47.0
48.0	47.5-48.4	.49	.49	.48	.47	.47	.46	.45	.46	.44	.43	.42	.42	.41	.40	.39	.38	.37	.36	.35	.34	.33							48.0
49.0	48.5-49.4	.50	.50	.49	.48	.47	.47	.46	.45	.45	.44	.43	.43	.42	.41	.40	.39	.39	.38	.37	.36	.35							49.0
50.0	49.5-50.4	.51	.50	.50	.49	.48	.48	.47	.46	.46	.45	.44	.44	.43	.42	.41	.40	.40	.39	.38	.37	.36	.34						50.0
51.0	50.5-51.4	.52	.51	.51	.50	.49	.49	.48	.47	.46	.46	.45	.45	.44	.43	.42	.42	.41	.40	.39	.38	.37	.36						51.0
52.0	51.5-52.4	.53	.52	.51	.51	.50	.49	.49	.48	.47	.47	.46	.46	.45	.44	.43	.43	.42	.41	.40	.39	.38	.37	.36					52.0
53.0	52.5-53.4	.54	.53	.52	.51	.51	.50	.50	.49	.48	.48	.47	.47	.46	.45	.44	.44	.43	.42	.41	.40	.39	.38	.37					53.0
54.0	53.5-54.4	.54	.54	.53	.52	.52	.51	.51	.50	.49	.49	.48	.48	.47	.46	.45	.45	.44	.43	.42	.41	.40	.39	.38					54.0
55.0	54.5-55.4	.55	.55	.54	.53	.53	.52	.51	.51	.50	.50	.49	.48	.48	.47	.46	.46	.45	.44	.43	.42	.41	.40	.39	.38				55.0
56.0	55.5-56.4	.56	.56	.55	.54	.54	.53	.52	.52	.51	.51	.50	.49	.49	.48	.47	.47	.46	.45	.44	.43	.42	.41	.40	.39				56.0
57.0	56.5-57.4	.57	.56	.56	.55	.55	.54	.53	.53	.52	.51	.51	.50	.50	.49	.48	.48	.47	.46	.45	.44	.43	.42	.41	.40	.39			57.0
58.0	57.5-58.4	.58	.57	.57	.56	.55	.55	.54	.54	.53	.52	.52	.51	.51	.50	.49	.49	.48	.47	.46	.45	.44	.43	.42	.41	.40	.39		58.0
59.0	58.5-59.4	.59	.58	.58	.57	.56	.56	.55	.55	.54	.53	.53	.52	.52	.51	.50	.50	.49	.49	.47	.46	.45	.44	.43	.42	.41	.40		59.0
60.0	59.5-60.4	.60	.59	.58	.58	.57	.57	.56	.55	.55	.54	.54	.53	.52	.52	.51	.51	.50	.49	.48	.47	.46	.45	.44	.43	.42	.42		60.0
61.0	60.5-61.4	.61	.60	.59	.59	.58	.58	.57	.56	.56	.55	.55	.54	.53	.53	.52	.51	.51	.50	.50	.49	.48	.46	.46	.45	.44	.43		61.0
62.0	61.5-62.4	.61	.61	.60	.60	.59	.58	.58	.57	.57	.56	.55	.55	.54	.54	.53	.52	.52	.51	.50	.49	.48	.47	.46	.45	.44	.43	.42	62.0
63.0	62.5-63.4	.62	.62	.61	.61	.60	.59	.59	.58	.58	.57	.56	.56	.55	.55	.54	.54	.53	.52	.51	.50	.49	.48	.47	.46	.45	.44	.43	63.0
64.0	63.5-64.4	.63	.63	.62	.61	.61	.60	.60	.59	.59	.58	.57	.57	.56	.56	.55	.55	.54	.53	.52	.51	.50	.49	.48	.47	.46	.45	.44	64.0

First Anniversary of Nomads Celebrated

The first anniversary of the Nomads was celebrated on Wednesday evening, December 6th, by the largest meeting yet held by the Los Angeles Chapter. Over one hundred members and guests were present at the dinner which was followed by talks by visitors from foreign fields and by an interesting lecture covering the adventures of a lone survivor of an expidition into the jungles of central South America. The large number of foreign visitors included George Wilzleben of U.B.O.C., Trinidad; D. D. Lewis of Standard of Venezuela, Caripito, Venezuela; T. Whitlake, D. Flemming and Mr. Gunst of the Shell interests from The Hague; Eric Eager and Archie Brown of Caribbean Petroleum Company from Venezuela; Dr. Von Heinigan of B.P.M. from The Hague; Charles Lilly of Standard of Arabia; Earl Grainger of the Shell interests in Maracaibo; C. C. Sutton of Caribbean Petroleum Company, Maracaibo; Ernie Smith of California Arabian Standard Oil Company; and Thomas Thomas of Imperial Oil Company.

The first speaker was Bart Gillespie who has just returned from Argentina where he had been with the Y.P.F. Although he has worked all over South America, Mr. Gillespie confined his remarks to operations in the Argentine. Walter Elliott of the Shell Company in Los Angeles then told of his recent trips to the Venezuelan fields and his brief visit in Europe where he was at the time war broke out. The main speaker of the evening was Dr. Gustav F. Struve who was introduced by R. O. Atkinson, a member of the Adventurers Club and who himself has had many interesting experiences in foreign countries.

Dr. Struve devoted his lecture to an Argentine botanical expedition on which he started in 1914 and from which he did not return for nearly five years. During most of this time he was a captive of head hunters in the upper Amazon basin. Leaving Buenos Aires the party struck north through Bolivia and across the western part of Brazil. All except Dr. Struve eventually died or were killed. In striking toward the Amazon in order to try to get back to civilization, he was picked up by a tribe of head hunters and carried to their camp. He became a member of the tribe and married the medicine man's daughter. Upon the birth of a son, he realized an inconquerable desire to take his boy back to civilization. With the six-months old child he finally escaped and, after inconceivable hardships, reached Guayaquil, Ecuador.

Dr. Struve is now a naturalized American citizen and an honorary member of at least one historical society. He has furnished objects to museums at New York and London and displayed a complete shrunken body of a man and several shrunken heads at the meeting. His son, carried out of the jungle, is now an officer in the Argentine army.

Harry E. Rogers Named Columbia S. F. Head

The appointment of Harry E. Rogers as San Francisco District sales manager of Columbia Steel Co., subsidiary of United States Steel Corp., has been announced by William A. Ross, president.

Mr. Rogers is a native of San Francisco and has been associated with the steel industry since 1924 when he joined the United States Steel Products Co., Pacific Division, prior to its merger with Columbia Steel Co. Prior to his appointment Rogers was assistant manager of sales in charge of solicitation.

Natural Gas Equipment Has New Valley Branch

Natural Gas Equipment, Inc., has opened a new branch office for the San Joaquin Valley Division, at Hanford,

Arthur C. Staat

with Arthur C. Staat in charge. Mr. Staat is a native son. Between graduation from High School in 1922 and his entrance to Pasadena Junior College, Mr. Staat worked for 14 months as assistant surveyor on the Rose Bowl under W. A. Taylor & Sons, Contractors. Out of Junior College, Mr. Staat went to work for Herb Eggleston in the Baldwin Hills gas plant of Pan American Petroleum Co. When Richfield took over Pan American Mr. Staat joined the Richfield organization, where he remained until 1932 as operator in absorption plants. In 1932 he joined the Del Rey organization where he remained until joining Natural Gas Equipment, Inc., in 1937.

St. Anthony Oil Earnings Increase

Substantial gains in this year's earnings of St. Anthony Oil Corp. over 1938 was indicated recently when directors of the company declared a dividend of 2% on the capital stock payable Dec. 30 to stockholders of record Dec. 18. A dividend of 4% was paid last September.

St. Anthony owns leases of some 90 acres in the Rosecrans oil field and approximately 400 acres in leases in Kern county.

According to John A. Woodward, president, further expansion and a drilling program is planned to begin in the immediate future on the company's Gordon lease in the Rosecrans oil field.

Oil Producers Agency Studies Insurance Costs

A questionnaire to develop the actual cost of fire losses in the production division of the oil industry is being mailed by the Oil Producers Agency to every oil producing company in California. The Agency hopes to get enough replies to remove all guess-work in oil company fire insurance rates.

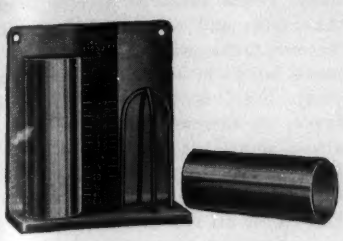
The questionnaire was prepared by the Agency under the supervision and counsel of Bayly, Martin and Fay, its insurance counsellors, and seeks replies to such questions as the actual value of the properties covered, the incidence of fires, the amount of insurance carried, etc. The answers will enable the Agency to make the first factual report on fire insurance costs ever made available to the oil industry.

The fire insurance survey is part of the Agency's investigation into oil company insurance costs, the first of which, into workmen's compensation insurance, was followed by two reductions in premiums totaling about 18%.

Every free American should be secure in his right to transport himself, his family, his friends and his own goods in his own vehicle, reads one of the planks in a platform adopted by a national group of highway users.

Baroid's Shearometer Simplifies Gel Strength Test

The Shearometer has been introduced by the Baroid Sales Department and is an A.P.I.-approved instrument for the field determination of the shear or gel strength of drilling fluids. It combines



simplicity of design and operation with sufficiently accurate determinations for field requirements.

The Baroid Shearometer Set as illustrated consists of two 5-gram Shearometer tubes, a direct-reading scale, and a holder. Two Shearometer tubes are included so that two determinations may be made without having to clean and dry each tube after every test.

The shear or gel strength is determined in terms of force per unit area. Consequently the scale is calibrated to read directly in pounds per 100 square feet in a range from 3.0 pounds per 100 square feet to 60.0 pounds per 100 square feet with the 5-gram Shearometer. Readings down to 1.5 pounds per 100 square feet are possible by using a 2.5-gram Shearometer which is also available. To use the scale with this type, it is necessary to divide the scale reading by two to obtain the correct gel strength reading.

To run a test with the Shearometer it is merely necessary to place the Shearometer very gently on a quiescent surface of the mud sample and allow it to sink vertically until it comes to rest. The depth of the pentration is then measured on the scale and the gel strength read directly therefrom in pounds per 100 square feet.

The Shearometer not only affords a simplified means of determining the gel strength of drilling mud but has the added advantage of being able to measure the mud's resistance to the settling of an object through the mud. This resistance is comparable to that offered by the mud in the system in opposing the settling of cuttings.

Further data on construction of the Shearometer and its proper use, as well as prices can be readily obtained from Baroid Sales Department offices at Los Angeles, Houston and Tulsa.

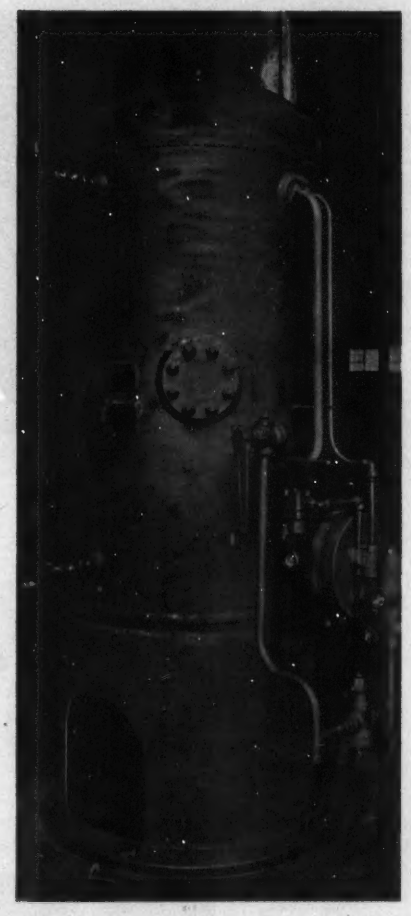
The taxes that come from a barrel of crude oil in its journey from well to consumer are equal nearly to its value.

Pacific Gas & Electric Gets Third Papico Odorizer

Completion of the sixth large PAPICO High Pressure Gas Odorizer for the Pacific Gas and Electric Corp. within a period of three years has been announced by the Los Angeles engineering firm of Harry F. Haldeman, Inc.

Surpassing the hitherto high gas working pressure of 600 lbs., this Haldeman Odorizer designed for 800 lbs. pressure is, based on information determined by a recent survey of the gas industry, probably the highest pressure gas odorizer made.

Specially designed to comply with API-ASME requirements for the unusual



pressure it has a shell made of 1½" thick flange steel. Merco Nordstrom valves and special Pyrex look glasses 13/16" thick are among the necessarily revised features. The run tank capacity is 300 gallons.

In spite of the fact that Calodorant, which the Odorizer is designed to inject, has a specific gravity of only 0.80, the aluminum float which actuates the liquid level is neither counter balanced nor vented, but it withstood the 1200 pounds per square inch gauge test pressure.

Seventy-two million cubic feet of gas per day is the odorizing capacity of this highly efficient PAPICO Odorizer. General demand is increasing to the extent that Haldeman is finding it necessary to speed up production materially in order to handle desired installations without delay.

Leeds & Northrup Condensed Catalogue

A 66-page, condensed catalogue, just issued, lists the entire Leeds & Northrup line of instruments for research and for routine testing in laboratory, plant and field . . . Standards, Galvanometers and Dynamometers, Bridges, Potentiometers, Photometric Apparatus, Miscellaneous Apparatus, Primary Elements, Accessories, Supplies, Instrument Parts. Every standard L&N item is briefly described, and most of the principal ones are illustrated. For more complete descriptions and much supplementary information, the reader is referred to more detailed L&N publications. However, in choosing instruments and accessories for specific work in laboratory, plant or field, many instrument users will find this condensed catalogue a useful guide.

A copy will be sent promptly to anyone who asks Leeds & Northrup Co., 4934 Stenton Avenue, Philadelphia, for Catalogue E—"Electrical Measuring Instruments For Research, Teaching And Testing".

Union Oil Orders Third Modern Tanker

In continuance of Union Oil Co.'s tanker replacement program, company officials stated recently that the Bethlehem Steel Co. has recently been awarded a contract calling for the construction of another 103,000-barrel capacity tankship. To be built at Bethlehem's Sparrows Point, Md. shipbuilding yard, the new tanker will be a sister ship to the L. P. St. Clair, put into service last March, and the Victor H. Kelly, to be launched on Jan 6.

With delivery slated for the latter part of 1941, it is expected construction on the ship will begin in the early part of 1941. Like her sister ships, she will be equipped with every modern device for the safety and comfort of the men.

Of the single screw type, the ship will be of the most up-to-date tanker design with a straight raked stem and cruiser stern. The ship will be of 13,000 tons deadweight and will have a sea speed of 12½ knots. Overall length will be 463 feet with a beam of 64 feet. The tanker will have a draught of 25 feet 4 inches.

Purchasing Personnel-ities

By Leo S. Busby
Associate Editor, Southwestern
Purchasing Agent

When we presume to introduce the buying department of the General Petroleum Corporation to the readers of the California Oil World, we are literally carrying coals to Newcastle. Men who have been actively associated with the oil industry for from ten to twenty-five years hardly need an introduction. And yet, perhaps, among our readers, is a young salesman who would greatly appreciate a brief "who's who" of the men who sign the orders at G. P. Assuming that we have our young salesmen's attention, we'll proceed on a short tour of the General Petroleum purchasing offices on the sixth floor of the Higgins Building in Los Angeles.

Probably the first person our y. s. should meet is the smiling secretary to the manager of the department, Mary O'Brien Casey. French? Hardly! Irish, by gosh! By name, by nature, and by nuptials! Mary's been in the department for ten years and if there's a salesman who doesn't know Mary, he's either very young or he just isn't selling materials to interest an oil company.

And now, if we can tear our y. s. away from those smiling, Irish eyes, we'll step quietly into the manager's office. E. W. Beck is one of the youngest purchasing agents employed by a major oil company in California. Bill, as he is familiarly known, has charge of all purchases for the General Petroleum Corporation. He started as a clerk in the Stores department in 1923, and came to the Purchasing department in 1926. He worked up through the various positions within the department until on February 16th, 1937, he was appointed manager of the department. Bill sports a very snazzy mustache of the Ronald Coleman type which gives him that glamorous magazine-cover look when he climbs into the National Guard Reserve Captain's uniform that hangs in his wardrobe. He's something of a golf nut, too, and his office is cluttered with the trophies of his prowess. Ask him to show IT to you sometime.

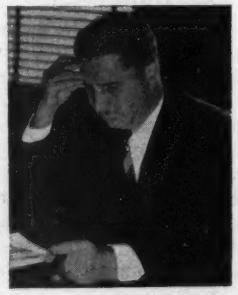
But we must carry on. Let's visit Bill Beck's assistant, P. J. Whiteley. Paul is one of the boys who saw foreign service in Tampico when G. P. was active in Mexico in 1920. He has had a varied career in the Stores and Purchasing departments, holding almost every conceivable position at one time or another. In 1937, Paul was made assistant manager of the department. Aside from an almost uncanny capacity for detail, Paul's big claim to fame is his single blessedness. How a man so entirely eligible can consistently maintain this status is the marvel of the department. Wonder how many young ladies read the California Oil World!

But perhaps our y. s. is selling service station equipment. In that case, he'll be mighty interested in meeting Jim Ross. Jim has been working for the G. P. since 1915, and although hardly over forty years old, has almost twenty-five years service with the company. In 1918, he came to the Purchasing department and has been a buyer since 1924. There are few buying angles that Jim doesn't know, and since his forebears hailed from the bonny isle of Scotland, most salesmen who contact him, do their figuring with very, very sharp pencils.

Salesmen who handle electrical equipment, and drilling and production items, are the gentlemen who send their cards in to F. N. Scott. Frank is another of the boys who date back to the Mexican campaign of 1920. For five or six years, Frank filled the position of storekeeper at the company's Taft warehouse, and acquired a host of friends in the Midway field. Then followed several years in the Stores and Salvage departments at Vernon, after which, in 1937, he was made buyer in the Purchasing department. Frank is a Texan, and like all the breed, is almighty proud of it. He's also a somewhat rabid football fan, and since his son is a student at U. S. C., the very mention of Tennessee makes him go for his gun—er—we mean, wallet.

A conference in the boss's office. Paul Whiteley, Charley Schneider, Frank Scott and Jim Ross. Bill Beck seated at the desk.

P. J. Whiteley, Assistant Manager of Purchases.



E. W. Beck, Manager of Purchases.

E. G. L. Smith and Mary O'Brien Casey

Ten on Tennessee will get you two tens on Troy. But dont say we told you!

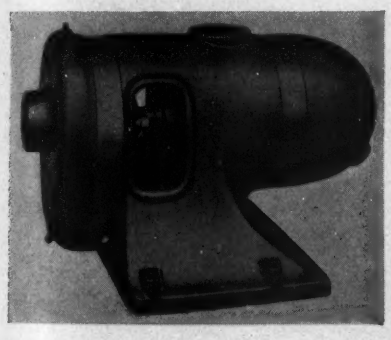
But let's suppose our y. s. represents a hardware concern. He'll want to meet the hardware buyer, E. G. L. Smith, better known as "Smithy", or "Alphabetical" Smith. Smithy's service also goes back to the Mexican days of 1920. in 1928, he became a buyer and served the G. P. in that capacity until 1931 when he took a similar position with the Kettleman North Dome Association. He returned to his old post at G. P. in 1938. Smithy is rapidly acquiring a brand new nick-name—"One Long Pan"—because of an uncontrollable tendency to quote those Chinese proverbs. Ask him for his latest!

And so we come to the youngest buyer on the staff, C. M. Schneider. Charley's service dates from 1925, and includes periods spent in various positions in the Stores and Purchasing departments. In May, 1937, he became a buyer, and now handles purchases of office furniture, office appliances, and "all such stuff as that there." Charley's one weakness is apples; big, shining, juicy, red ones. You'll always see one on his desk awaiting the 3:00 P. M. time-out. Guess he never read that story about Adam!

And that, my ambitious y. s., is a thumb-nail sketch of the men who go to market for old G. P. May this brief introduction inspire you to a better acquaintance with them!

Smith Centrifugal Pump Has Many New Features

Featuring the ingenious combination of a fully enclosed, self-protected, electric motor with centrifugal pump in a single, compact frame, the sensationally



new Smithway centrifugal pump is now available, according to an announcement by the Smith Meter Co. of Los Angeles.

Of interest to the trade is the manufacturer's claim that the Smithway centrifugal pump provides in one compact unit the smallest size-to-power and highest power-to-weight ratio of any motor operating on a standard cycle three phase current. The most important feature, however, is said to be the fact that the pump frame is so constructed that water or other liquid being handled is passed around the thin tubular shell of the motor providing definite and continuous cooling.

The design and construction of the Smithway centrifugal pump, the manufacturer states, offer many advantages over the conventional type pump assembly, such as, predetermined operating temperatures, assuring the maintenance of motor capacity, continuous cooling, fully enclosed, moisture-, shower-, dust-, splash-, and drip-proof features. The unit mounts in any position.

Powered with a Sawyer Hi-Power tubular type motor, one-half to ten H.P., the Smithway handles from 20 G.P.M. to 200 G.P.M. and operates on temperatures to 200°F or more, and heads up to 250 feet. The motor shaft is carried on two ball bearings, easily accessible, yet rigidly and compactly mounted in a single frame. Perfect alignment is maintained as the impeller of the pump is mounted directly on the motor shaft. Passage ways are large. An extra large outlet pipe practically eliminates discharge losses.

Full details of this amazing new pump are contained in a bulletin available from the Smith Meter Co., 5743 East Leneve Street, Los Angeles, Calif.

These sturdy Clark Bros. units first saw active duty when El Segundo was the West Montebello of another day. Moved to the new O. C. Field plant in the boom Montebello field, these engines are considered suitable for one of the most modern gasoline plants in the state.

Venezuela Favored In Import Allocation

The President signed a proclamation on Dec. 12, 1939, allocating for the period from Dec. 16, 1939 to Dec. 31, 1940, inclusive, among countries of supply, the quantity of crude petroleum and fuel oil entitled to a reduction in the rate of import tax under the trade agreement with Venezuela signed on Nov. 6, 1939. The agreement provides for a reduction in the import tax on crude petroleum, topped crude petroleum, and fuel oil derived from petroleum including fuel oil known as gas oil, from ½c to ¼c per gallon on an annual quota of imports not in excess of 5% of the total quantity of crude petroleum processed in refineries in the continental United States during the preceding calendar year. For the remainder of the present calendar year during which the agreement will be in force, a tariff quota equal to 1/12 of this amount is provided. Imports above these amounts are dutiable at ½c per gallon.

Under the terms of the proclamation, the shares of the total imports of such petroleum and fuel oil entitled to a reduction in the rate of import tax are allocated among countries of export on the basis of the proportions of the total imports for consumption in the United States supplied during the first ten months of 1939, the latest period for which statistics are available. The following allocations of the tariff quota are set forth in the proclamation:

United States of Venezuela	71.9%
Kingdom of the Netherlands (including its overseas territory)	20.3%
Republic of Colombia	4.0%
Other foreign countries	3.8%

Freedom of the highways is a basic human right, according to the National Highway Users Conference.

Business and Professional Directory

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1500 ft. 2½" extra-heavy drill pipe, quick change couplings. Portable rotary rig for sale. Madsen, 1569 W. 48th St., Los Angeles, Calif. 12/5-d

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Arc Welder, 300 amp. Hobart Gas Driven, Trailer Mounted. Phone Whittier 43182 or Write Box 716, Santa Fe Springs, Calif. 1-5d

MAPS

Large maps of Los Angeles Basin oil fields and map showing all California oil fields. Price $15.00 each on paper and $20 each on cloth. Individual state oil and gas maps of Mid-Continent and Rocky Mountain regions. Maps show geological cross sections at base. These maps indicate wells drilling, wells producing and abandoned, with depths.
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Los Angeles, Calif.
Phone: TUcker 7530

Oil Men's Calendar

C.N.G.A. Meeting First Thurs. Each Month.

1940—January

15-19—Society of Automotive Engineers, Annual Meeting and Engineering Display, Book-Cadillac Hotel, Detroit, Mich.

February

12-15—American Institute of Mining & Metallurgical Engineers, New York.

April

8-12—American Chemical Society, Cincinnati, Ohio.

10-12—American Association of Petroleum Geologists, Chicago, Ill.

11-12—American Petroleum Institute, Eastern District, Division of Production, Columbus, Ohio.

18-19—National Petroleum Assn., 37th Semi-Annual Meeting, Cleveland Hotel, Cleveland, Ohio.

May

1-3—Petroleum Industry Electrical Assn., Dallas, Texas.

15-17—Natural Gasoline Association of America, Hotel Tulsa, Tulsa, Okla.

18-25—Int. Pet. Exposition, Tulsa.

After an automobile is built tax collectors during its lifetime collect $4 for every $1 that was paid to workmen for building the car.

A law in Texas says that it is unsafe to haul a load of more than 7,000 pounds on a truck, except when the truck is going to a railroad station, when 14,000 pounds is permitted to be hauled as a safe load.

"Emergency" gasoline taxes collected by the federal government and several states in addition to "regular" gasoline taxes now take approximately $300,000,000 annually from the pockets of motorists.

California Crude Oil Production

Three Weeks Ended December 16, 1939

	December Daily Quota	Average Daily Production	Excess
San Joaquin Valley			
Belridge—North	12,674	11,927	*747
Belridge—South	2,088	1,131	*957
Buena Vista	16,660	18,432	1,772
Canal	5,929	5,659	*270
Coalinga-E. (Eocene)	10,200	9,993	*207
Coalinga—East-West	15,606	9,472	*6,134
Cole's Levee	2,855	2,965	110
Edison	2,232	2,380	148
Elk Hills	7,624	12,866	5,242
Fruitvale	6,172	6,659	487
Greeley	3,158	2,945	*213
Kern Front	7,296	6,311	*985
Kern River	6,760	3,780	*2,980
Kettleman No. Dome	34,150	50,093	15,943
Lost Hills	3,991	3,270	*721
McKittrick	3,708	3,486	*222
Midway	37,342	32,435	*4,907
Mount Poso	10,320	10,289	*31
Mountain View	9,294	9,839	545
Rio Bravo	7,548	7,574	26
Round Mt. and Coffee Canyon	7,684	8,241	557
Ten Section	8,461	9,076	615
Wasco	1,229	1,247	18
Other Fields	3,194	3,180	*14
TOTAL	226,175	233,250	7,075
Coastal Counties			
Elwood	3,769	3,998	229
Rincon	2,661	4,107	1,446
Santa Maria	6,305	3,373	*2,932
Gato Ridge	2,528	554	*1,974
Santa Maria Valley	18,075	8,568	*10,407
Santa Paula-Newhall	5,801	6,245	444
Ventura Avenue	31,015	36,559	5,544
Other Fields	5,343	5,532	189
TOTAL	76,897	68,936	*7,461
Los Angeles Basin			
Alamitos-Seal Beach	7,008	6,934	*74
Brea—Olinda	8,112	5,555	*2,557
Coyote—East	3,203	2,755	*448
Coyote—West	9,937	5,425	*4,512
Dominguez	16,404	18,042	1,638
El Segundo	2,839	2,603	*236
Huntington Beach—New and Old	23,379	27,723	4,344
Inglewood	13,054	13,514	460
Long Beach	40,331	44,947	4,616
Montebello	5,931	5,812	*119
Montebello-West End	23,402	21,981	*1,421
Playa del Rey	4,139	4,286	147
Richfield	7,270	8,240	970
Rosecrans-Athens	8,406	10,130	1,724
Santa Fe Springs	24,449	26,443	1,994
Torrance	5,414	5,345	*69
Torrance "34" and "D & B"	7,524	8,635	1,111
Wilmington	80,929	86,371	5,442
Other Fields	3,747	4,235	488
TOTAL	295,478	308,776	13,298
STATE TOTAL	598,050	610,962	12,912

*—Shortage.